COLUMBIA LIBRARIES OFFSITE
HEALTH SCIENCES RESTRICTED
HR00552852

American dental surgeon

Serial
v.30
1910
copy 1
A

Columbia University
in the City of New York
School of Dental and Oral Surgery

Reference Library

Digitized by the Internet Archive
in 2014

https://archive.org/details/dentalsummary3019unse

THE

Dental Summary

EDITED BY

L. P. BETHEL, M. D., D. D. S.

COLUMBUS, OHIO

VOL. XXX

PUBLISHED MONTHLY BY

THE RANSOM & RANDOLPH CO.

TOLEDO, OHIO

Index to the Dental Summary

VOLUME XXX

1910

A

		Page
Abscesses—Treatment of Chronic	*G. A. Billow*	458
Abscess—Treatment of Chronic Alveolar	*E. T. Loeffler*	1034
Acquaintance—Extending	*C. N. Johnson*	827
Accounts—Paying of.	*Geo. F. Burke*	950
Address—President's.	*J. W. Lyons*	221
Address—President's	*D. A. House*	263
Address—President's	*H. J. Feltus*	367
Address—President's	*James E. Dowden*	668
Address—President's.	*F. A. Lee*	747
Alypin as an Anesthetic.	*B. Bennett*	841
Alimentary Canal—We Control Only Three Inches of It.	*Wm. H. Seibert*	528
Amalgam—To Keep Bright		88
Antrum of Highmore—The	*A. J. Bercier*	817
Anesthesia—High Pressure.	*Robert H. Welsh*	214
Anesthesia—High Pressure	*W. T. Jackman*	289
Anesthesia—General	*F. R. McClanahan*	423
Anesthesia—A Pressure Method	*E. W. Martindale*	672
Anesthetics in Dentistry	*C. H. Taylor*	412
Anesthetics for Dental Surgery	*L. G. Noel*	419
Arches and Palate—Development of Dental	*O. W. White*	95

B

Base Plate—A Good	*Robert E. Elster*	682
Backing for Steele Facing—Method of Making Gold	*Simpson and Ballou*	342
Bicuspid Roots—Restoring of	*Auber Peebles*	720
Biology—The Rise of	*E. P. Beadles*	744
Bridge Dummy—A Jacketed	*James B. Lester*	118
Bridges—Casting of	*W. H. Hayden*	603
Bridge Work—Vulcanite Teeth for	*George W. Emery*	456
Bridge Dentures—Anchorage for	*Ellison Hillyer*	180
Bridge—A New Type of	*Fredrick B. Kremer*	609
Bridgework—A Review of	*C. J. Grieves*	777, 897
Bridging Anterior Teeth	*J. M. Crosby*	1063
Broach—Attachment for Nerve	*N. H. Grove*	457
Business and Dentistry	*L. P. Bethel*	936
Business Side of Dentistry	*W. H. Stacy*	1024

C

Caries—Prophylactic Measures in	*Thos. E. Weeks*	312
Casting Suggestions	*J. G. Lane*	176
Casting Pure Aluminum Base Plate	*C. E. Talbert*	339
Casting Aluminum Upon the Teeth	*H. J. Friedman*	669
Casting—Saliva Ejector in		672
Cavity Preparation—Rapid	*Chas. W. Mills*	675
Cement—Anchor Screw Re-inforcement with	*A. McAlpin*	461
Cocain and the Rubber Dam	*Levi C. Taylor*	72
Cocain—Substitutes for		178
Competency—What Should a Dentist's Be	*Edward C. Mills*	983
Contact Point—The	*E. S. Packwood*	303
Contention—Save That More Noble	*J. A. Rupert*	253
Crown and Bridgework	*J. H. Laudry*	19
Crown—Preparation for Porcelain Jacket	*H. J. Frank*	72

Page

Crown—Holding for Polishing . . . 87
Crown and Bridgework—Application of Porcelain Facings to . . . *Thos. E. Weeks* 105
Crown and Bridgework . . . *Thos. E. Weeks* 111
Crown—Making Cast Gold . . . *G. W. Dittmar* 175
Crown—Adaptation of Porcelain . . . *Raymond S. Clark* 178
Crowning—Badly Decayed Roots in . . . *John Steele* 182
Crown—Base for a Richmond . . . *James E. Boyd* 358
Crown and Bridgework—Porcelain Facings for . . . *Delos H. Carpenter* 452
Crown—Making a Porcelain . . . *F. B. Johnson* 456
Crown Using Steele Facing—Bicuspid . . . *J. C. McDonald* 677
Crown—A Useful . . . *Allan G. Bennett* 840
Crown—Mounting an All-Porcelain on Cast Base . . . *J. G. Lane* 1061
Crown—Method of Making an All-Cast . . . *W. R. Badger* 1062
Crown—Method of Removing and Repairing a Gold . . . *E. S. Hodgson* 1065

D

Dental Society—Ohio State . . . 67
Dental Hygiene and Oral Prophylaxis—Committee of . . . *G. C. Bowles* 150
Dental Law Information . . . 153
Dental Educational Work—Cleveland Public Schools of . . . *W. G. Ebersole* 324
Dental Science and Literature—Of Committee on . . . *G. C. Bowles* 350, 216
Dental Science and Literature—Report on . . . *H. E. Strain* 354
Dental Literature—Classifying . . . *Charles Shepard Fuller* 359
Dental Inspection in the Public Schools . . . *Harold Barnes* 519
Dentistry for the Masses . . . *Sidney J. Rauh* 530
Dental Office and Surroundings . . . *W. H. Whitslar* 162
Dental Educational Work—Cleveland Schools . . . *W. G. Ebersole* 143
Dental Medical Considerations—Some . . . *T. S. Conover* 612
Dentistry—Humanitarian . . . *W. G. Ebersole* 678, 752
Dentistry and the Needs of the Dentist . . . *Alfred Owre* 830, 911
Dentist—Is It Desirable for a Dentist to be an M. D.? . . . *T. H. Parramore* 742
Dental Practice—How to Make Pay . . . *Fredrick Crosby Brush* 925
Dentistry—How to Create a Demand for High Class . . . *J. M. Thompson* 948
Dentistry—A Patient's Idea of . . . *H. M. Semans* 967
Dentistry—The Business Side of . . . *J. R. Bell* 962
Dentists—Is There an Age Limit for . . . *M. H. Fletcher* 981
Dentistry—Extending the Field of . . . *W. G. Ebersole* 994
Dental Profession—The Young Man in . . . *William C. Fisher* 992
Dentine and Enamel—Cutting of . . . *H. T. Smith* 340
Denture—A Home-Made . . . *F. B. Kremer* 671
Denture for a Mouth With Cleft Palate—A . . . *W. B. Kiger* 677
Dentures—Securing a Soft Rubber Base in Lower . . . *Max Ordover* 864
Dentures—Elimination of Guess-Work in . . . *J. A. Borts, C. C. Booth* 1042
Diagnosis—Some Points in . . . *Geo. Edwin Hunt* 711
Die Metal . . . 88
Difficulties We Have Encountered—Some of the . . . *J. P. Corley* 563
Diplomacy and the Dentist . . . *C. M. Wright* 956
Diseases—Treatment of Dental . . . *W. H. O. MeGehee* 364
Disclaimer and a Warning . . . 388
Dummies—Wax . . . *Ernest B. Hill* 462
Duty of the Dentist—The Public . . . *B. Holly Smith* 789

E

Educating the Press and the Profession—Necessity of . . . *F. W. Howlett* 241
Ethel Chloride Narcosis . . . *Maurice Green* 409
Extractions—Difficult . . . *Alfred Hall* 15
Extraction of Cuspids . . . *J. A. Coates* 461

F

Facing—To Replace a Broken . . . *Max H. Feldman* 179
Faradic Current in Dental Diagnosis—The . . . *J. G. Parr* 675
Fees—How to Maintain Good . . . *Henry Barnes* 961
Fees . . . *J. R. Callahan* 1011
Fillings—Polishing Surfaces of . . . *E. Ballard Lodge* 283
Filling—A Contour Amalgam . . . *J. D. Whiteman* 1066
Fractures—Treating . . . *Robert T. Oliver* 616
Fraternalism Among Dentists—The Advantage of . . . *Carl D. Lucas* 1001

G

Page

Gold--Contraction and Expansion of in Casting . . . *C. J. Clark* 11
Gold—About Non-Cohesive . . . *H. B. Tileston* 53, 129
Gold—Protect from Amalgamation . . . *A. F. Donahower* 175
Gold—Recovering from Filings . . . *D. W. Barker* 341
Gold in Contact with Tooth Tissues—Effect of Large Masses of . . . *I. N. Broomell* 635
Gum Sections—Grinding . . . *J. O. Hawkins* 361

H

Handpiece—Adjust Spring to . . . 177
Hand—The Human . . . *W. H. Whitslar* 655
Health—Attitude of State Government Toward . . . *H. C. Brown* 591
Health—United States Government Toward . . . *C. W. Wille* 593
Hints—Useful . . . *A. P. Kilbourne* 343
Hooks and Crooks . . . *W. M. Clawson* 460

I

Influence and How to Get It . . . *H. R. Hambly* 1022
Inlays—Gutta Percha Protects Cement Line of . . . *Percy B. McCullough* 87
Inlay—One Objection to an . . . *J. E. Hinkins* 87
Inlays—Clay Pipes and Gold . . . *C. S. Starkweather* 455
Inlay for Posterior Teeth—Gold . . . *George W. Emery* 458
Inlays—Retention of . . . *Elliot Carpenter* 175
Inlays—Replace Gold and Amalgam Fillings? . . . *Charles P. Pruyn* 625
Inlay—Technic of a Cast Gold . . . *A. F. Miller* 737
Inlay and Post—Restoration by . . . *J. S. Ashbrook* 1064
Instruments for Cement Working—Varnished for . . . 182
Interest in the Work—Our . . . *Henry C. Muckley* 556
Investing Materials—Manipulation of . . . *S. D. Ruggles* 458

L

Law in Virginia—New Dental . . . *F. W. Stiff* 496
Law—Enacted in Virginia . . . 498
Lectures in the Schools—Importance of . . . *Mrs. Sarah E. Hyre* 558
Leucodescent Light in Dental Practice . . . *W. G. Ebersole* 667
Leucodescent Lamp—Use of a . . . *S. M. Weaver* 667
Literature . . . *W. L. Fickes* 477
Local Work—The . . . *Weston A. Price* 560
Logic and Sophistry Regarding Operations in Mouth . . . *Edward Eggleston* 738
Ludwig's Angina . . . *Fred Fletcher* 111

M

Malnutrition in the School Child—Study of . . . *Mather Sill* 227, 344
Malocclusion under Retention—Case of . . . *W. E. Newcomb* 673
Malocclusion of Teeth—Treatment of . . . *W. Wayne Babcock* 810
Malocclusion—Abnormalities of Superior Maxilla Influencing . . *E. J. Bernstein* 327
Matrix—A Convenient . . . *M. A. Gottlieb* 179
Matrix—Use of the Copper . . . *W. J. R. Akeroyd* 459
Mechanical Force—Its Action and Reaction . . . *J. A. Bullard* 88
Menace—To Welfare Country People . . . *A. P. Kilbourne* 141
Model—Fasten Broken Teeth to a . . . *Fritz Sachse* 180
Molars—Restoration of Lost . . . *Geo. N. Wasser* 670
Money—How a Dentist Should Invest . . . *S. D. Ruggles* 952
Mouths of School Children—Care of . . . *Eugene S. Talbot* 517
Mouths—Condition of Children's in Public Schools . . . *L. Waddell* 1066

N

Nitrous Oxid with Oxygen—Thirteen Thousand Administrations of . . . *Charles K. Teter* 434

O

Obtunder for Exposed Pulps . . . *Oscar Gertzden* 761
Obstacles of Country Practice—Some . . . *H. C. Sexton* 969
Obstacles of the City Dentist—How to Overcome . . . *H. B. Tileston* 974
Oral Phrophylaxis and the Dental Profession . . . *M. Bennett* 58

		Page
Oral Infection—Handling of	*Adolph Bernard*	64
Oral Hygiene in Public Schools—Lecture on	*Emma Meinhardt*	267
Oral Hygiene to Become National Movement	*Paul G. White*	271
Oral Hygiene—Committee on	*W. T. Jackman*	542
Oral Hygiene—National Campaign for	*G. C. Ashmun*	545
Oral Hygiene in Public Schools—Why We Need	*J. W. Dowd*	552
Oral Hygiene—Remarks on	*Myron T. Herrick*	568
Oral Hygiene—Importance of	*W. G. Ebersole*	573
Oral Cavity—The School Children Conditions of the	*W. A. Evans*	582
Organization—Influence of	*L. B. McLaurin*	260
Orthodontia Appliances—New Features in	*Herbert A. Pullen*	257
Orthodontia—Some Principles of Retention in	*Martin Dewey*	53, 141, 473

P

Patronage—Winning	*C. N. Johnson*	383
Patients—Managing	*C. N. Johnson*	486
Personality	*G. E. Harter*	73
Physical Culture for Dentists	*G. E. Harter*	987, 1057
Plate—Reswaging a Gold	*C. E. Talbert*	339
Plate Casting	*J. H. Lane*	177
Plates—Cast Gold	*H. Seger Dorez*	181
Plate Work—To Restore Imperfect Casting in Aluminum	*J. F. Gatts*	1065
Porte Polisher for Holding Orangewood Points	*R. L. Hesser*	343
Practical Suggestion—A	*C. S. Starkweather*	136
Practical Suggestion	*G. A. Dowman*	267
Practical Suggestions	*E. E. Haverstick*	670
Practical Points and Pointed Philosophy	*N. S. Cox*	1043
Practical Hints	*M. M. Brown*	1062
Practice Building—Points to be Observed in	*E. H. Westenhaver*	1017
Practice—Why Dentists Fail to Make a Success of	*Grafton Munroe*	979
Prices—Set	*H. F. Marston*	946
Professional Life from a Business Standpoint	*Lee E. Smith*	119
Proprietary Preparations—Use in Dentistry	*J. P. Buckley*	37
Prosthesis—Thoughts on the Ethics of	*Geo. H. Wilson*	32
Proximal Spaces—Care of	*H. E. Friesell*	22
Pulpitis—To Relieve	*W. H. Tweedle*	174
Pulp Nodules	*R. R. Gillis*	200
Pyorrhea Alveolaris—Some Important Considerations	*Elgin MaWhinney*	1
Pyorrhea Alveolaris—A Plea to the General Practitioner	*E. E. Voyles*	42
Pyorrhea Alveolaris—Why Indians Have No	*W. A. Allen*	65
Pyorrhea Alveolaris—Important Considerations of	*Elgin MaWhinney*	124
Pyorrhea Alveolaris—Report on	*E. M. Ramelli*	800, 902

R

Record—Keeping a Business	*W. H. Ellis*	1008
Records—Keeping Dental	*A. D. Black*	1003
Remarks	*G. C. Ashmun*	545
Response	*Richard Grady*	548
Response	*Burton Lee Thorpe*	572
Retention in Orthodontia—Principles of	*Martin Dewey*	47, 136
Rigg's Disease—Some Phases of	*Howard T. Stewart*	193, 760
Root Canal Filling—Paraffin	*W. G. Hamm*	460
Root Canals—Treatment of	*M. L. Rhein*	701
Root Canals—Treatment of	*A. D. Kyner*	842
Root Canal Dressing—For a	*F. W. Stephen*	181
Rubber—Improve the Color of Pink		177
Rubber Repairs—Short Cut in	*M. B. Yeoman*	342

S

Saliva—A Sermon on	*H. C. Sexton*	370
Service—The Quality of	*Eugene S. Talbot*	990
Solder—Remove Grease from		180
Solder—New Aluminum		761
Somnoform as an Anesthetic in Dentistry—Experience with	*H. M. Semans*	450
Sprue Wire—Size of	*M. L. Ward*	182
State Work—The	*W. T. Jackman*	559
Steel—Hardening		761
Stomatology—The Present Status of	*Edward C. Briggs*	211
Stomatologist—How Shall He Be Educated	*Eugene Talbot*	721

INDEX VOLUME XXX- *Concluded*

Page

Stomatologist—Discussion on . . . 819
Stomatologist—How Shall He Be Educated . . . *J. E. Power* 728
Stomatologist—How Shall He Be Educated . . . *M. H. Cryer* 732
Superior Maxilla—Abnormalities of . . . *Edward J. Bernstein* 462
Syphilis of the Mouth . . . *S. L. McCurdy* 851
Syphilis—Points for the Dentist . . . *H. G. Langworthy* 876
Syphilis—Oral Lesions of . . . *Geo. A. Holliday* 862
Syphilis with Reference to Recent Work . . . *Henry Rockwell Varney* 879

T

Teeth—Discoloration and Treatment of the . . . *I. G. Kukay* 180
Teeth—Wiring Loose . . . *R. B. Tuller* 181
Teeth—Staining Artificial . . . *F. E. Roach* 682
Teeth—Treatment of Pulpless . . . *Oscar J. Ory* 123
Teeth—How to Brush the . . . *Wm. Crooks Teter* 671
Therapeutics—Uses of Core in . . . *O. E. Inglis* 1027
Treatment—Preventive and Rescue . . . *N. S. Hoff* 1050

W

Welcome—Address of . . . *H. C. Baehr* 571
Welcome—Address of . . . *W. H. Elson* 547
Willoughby D. Miller—A Journey to the Old Home of . . . *E. C. Mills and H. M. Semans* 66, 166, 278

EDITORIAL

Get-Together Clubs . . . 84
Scientific Presidents . . . 85
District Editors . . . 86
THE DENTAL SUMMARY Praised . . . 86
Reciprocity . . . 172
Dental Educational and Oral Hygiene Work in Public Schools . . . 173
Remembered . . . 174
Wisdom from the Mouths of Babes . . . 284
Dental Surgeons for Navy and Army . . . 284
Testimonial Banquet in Honor of Dr. G. V. Black . . . 286
Orthodontics Instead of Orthodontia . . . 390
The Difference . . . 391
Offensive Breath . . . 392
Launching of National Campaign for Oral Hygiene . . . 392
Anesthetics in Dentistry . . . 491
Dentistry Legalized as a Specialty of Medicine . . . 495
Public Dental Hygiene Exhibits . . . 683
Why Not Orthodontology? . . . 685
How Shall the Stomatologist Be Educated? . . . 757
An Interesting Experiment . . . 759
The Every Day Hero . . . 760
Dental Research Laboratories . . . 838
A Filler . . . 839
Syphilis . . . 917
Mistakes of Men . . . 1067

OBITUARY

Dr. J. Y. Crawford . . . 601, 686
Dr. William H. Todd . . . 762
Dr. C. B. Rohland . . . 764
Dr. A. H. Brockway . . . 765

NEW PUBLICATIONS

History of Dental Surgery (Pub. by National Art Pub. Co.) . . . *R. E. Koch* 89
Modern Dental Materia Medical Pharmacology and Therapeutics (Pub. by Blakiston's Son & Co.) . . . *J. P. Buckley* 290
Dental Laws Condensed . . . *Alphonso Irwin* 291
Dental Directory of Illinois . . . 291
Lectures on General Anesthetics in Dentistry . . . *William H. De Ford* 602

SOCIETY ANNOUNCEMENTS

Society Announcements . . . 90, 183, 292, 391, 393, 501, 687, 918, 1003, 1068

NEWS AND OPINIONS

News and Opinions . . . 183, 295, 391, 501, 604, 691, 844, 919

CONTENTS

REGULAR CONTRIBUTIONS.

Pyorrhea Alveolaris—Some Important Considerations .. ELGIN MA WHINNEY 1

Theoretic Consideration of Expansion and Contraction of Gold .... C. J. CLARK 11

Difficult Extractions and Their Management .... ALFRED W. HULL 15

Crown and Bridge Work .... J. H. LAUDRY 19

The Care of the Proximal Spaces .... H. E. FRIESELL 22

Some Thoughts on the Esthetics of Prosthesis .... GEO. H. WILSON 32

Is There Any Necessity for Use of Proprietary Preparations in Practice of Dentistry? .... J. P. BUCKLEY 37

Pyorrhea Alveolaris—A Plea to the General Practitioner .... E. E. VOYLES 42

Some Principles of Retention in Orthodontia .... MARTIN DEWEY 47

Something About Non-Cohesive Gold .... H. B. TILESTON 53

Oral Prophylaxis and the Dental Profession .... MABEL M. BENNETT 58

Suggestions As to the Handling of Oral Infection .... ADOLPH BERNARD 64

Why Indians of the Plains Were Not Troubled With Pyorrhea Alveolaris .... W. A. ALLEN 65

The Ohio State Dental Society 67

THE SUCCESSFUL DENTIST

Personality .... G. E. HARTER 73

MISCELLANY

A Pilgrimage to the Old Home of the Late Willoughby D. Miller .... DRS. E. C. MILLS AND H. M. SEMANS 77

EDITORIAL

Get-Together Clubs 84

Scientific Presidents 85

District Editors 86

The Dental Summary Praised 86

New Publications 89

Society Announcements 90

PRACTICAL SUGGESTIONS

Preparation of Tooth for Porcelain Jacket Crown .... HARRIS J. FRANK 72

Cocain and the Rubber Dam .... LEVI C. TAYLOR 72

Gutta-Percha Protection to the Cement Line of Inlays .. PERCY B. McCULLOUGH .. 87

One Objection to an Inlay .... J. E. HINKINS 87

Method of Holding Crown for Polishing 87

Mechanical Force—Its Action and Reaction .... J. A. BULLARD 88

To Keep Amalgam Bright 88

Die Metal 88

To Correspondents: Send communications, exchanges, books for review, etc., intended for the Editor of Dental Summary, to Dr. L. P. Bethel, 1255 Neil Ave., Columbus, Ohio. Subscriptions and advertisements, send to the publishers.

THE RANSOM & RANDOLPH CO., TOLEDO, OHIO.

Copyrighted 1909 by The Ransom & Randolph Co.

DR. GEO. H. COPP
PRESIDENT
PLAINWELL

DR. WM. A. GIFFIN
VICE PRES.
DETROIT.

DR. J. WARD HOUSE
TREASURER
GRAND RAPIDS

DR. DON M. GRAHAM
SECRETARY
DETROIT.

DR. N. S. HOFF
LIBRARIAN
ANN ARBOR

DR. GEO.
ZEDERBAUM
ED. TRANSLATIONS
CHARLOTTE

Michigan State Dental Association 1909-10

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX JANUARY, 1910 No. 1

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Lousiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society
and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. BETHEL, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address	District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.	Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Minneapolis	Dr. F. B. Kremer, Masonic Temple	Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland	Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
Kansas City	Dr. Martin Dewey, Argyle Bldg.	D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.	Louisville	Dr. H. B. Tileston, Equitable Bldg.
Los Angeles	Dr. B. Frank Gray, Security Bldg.	Memphis	Dr. D. M. Cattell
San Francisco	Dr. Robert Dunn, 323 Geary St.	Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.	N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"	Richmond	Dr. F. W. Stiff. 600 E. Grace St.

Yearly Subscription, $1.00 in U. S. and Canada.
Foreign, in U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

PYORRHEA ALVEOLARIS—SOME IMPORTANT CONSIDERATIONS FOR GENERAL PRACTITIONERS*

By Elgin MaWhinney, D. D. S., Chicago, Ill.

WHEN invited to speak to you on the subject of pyorrhea alveolaris, I gladly consented, for upon no other subject is there so much need of arousing the interest of general dental practitioners.

While much has been spoken and printed on this subject, still many, in fact the great majority of dentists, take little or no interest in the treatment of the class of diseases that are usually grouped under the term pyorrhea alveolaris.

In the face of the fact that *more* teeth are lost from this class of diseases than from all other causes combined, dentists are everywhere neglecting to qualify themselves to meet humanity's crying need for relief and protection from its ravages.

Worse and more discouraging than this is the fact that many dentists are doing all they can to convince sufferers from these diseases that nothing of permanent value can be done for them, pronouncing sentence of destruction without even so much as a heartache.

---

*Read before the Northern Indiana Dental Society, September, 1909.

My message to you today, after fifteen years' experience, is that 80 per cent. of all cases of so-called pyorrhea alveolaris *is curable,* and if all cases were undertaken at the beginning of its manifestation, fully 90 per cent. is amenable to treatment.

Pyorrhea alveolaris is an *insidious* disease manifesting itself in a great variety of forms, sometimes due to systemic disturbances, but most often due to local causes entirely, which are occasionally superinduced by specific systemic disturbances such as uric acid diatheses, auto-intoxication, Bright's disease, diabetes and other forms of faulty elimination.

Whatever may be the causes all cases can be benefited and the *great majority cured* by *local treatment alone.*

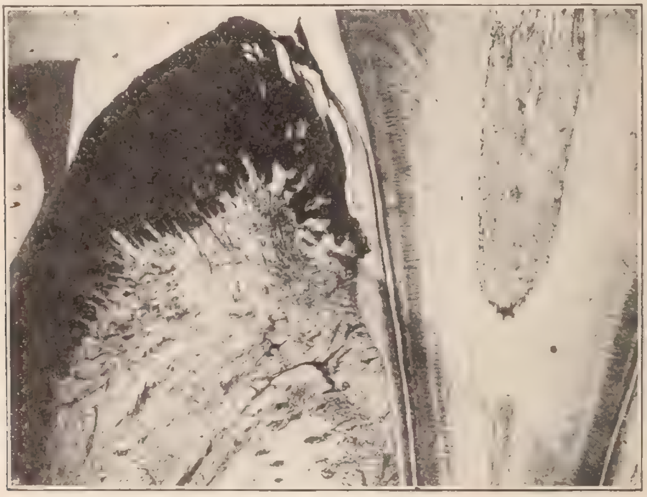


Fig. 1

Whatever may be the causes, all cases may be benefited, but none cured by general or specific systemic treatment alone.

In all cases the local treatment is the important basic thing so far as pyorrhea alveolaris itself is concerned, and systemic treatment is only auxiliary, although in many cases exceedingly helpful—and in a small percentage of cases essential to permanent cure.

If local treatment is the basis of all cures, of what does that consist? It consists of four steps:

First, the cleansing and polishing of the tooth crowns and unattached root surfaces.

Second, the surgical removal of all *necrotic irregular* tissue.

Third, the removal of all sources of irritation and inharmony.

Fourth, proper massage and the application of antiseptic, astringent, alterative agents to stop pus formation, constringe the gum tissue about the teeth necks, alter and tone the local capillary circulation.

It is essential that we have a clear understanding of the normal tissues as a basis for study of the abnormal or pathological.

Before taking up the treatment let us consider briefly the gum tissue, proximal contact of the teeth, etc.

Histologically the gum tissue may be described as a mass of connective tissue made up of interlacing fibers, mostly of the tough white variety continuous with the periosteum of the alveolar border, and the principal fibers of the peridental membrane at the teeth necks, and all covered with heavy mucous membrane.

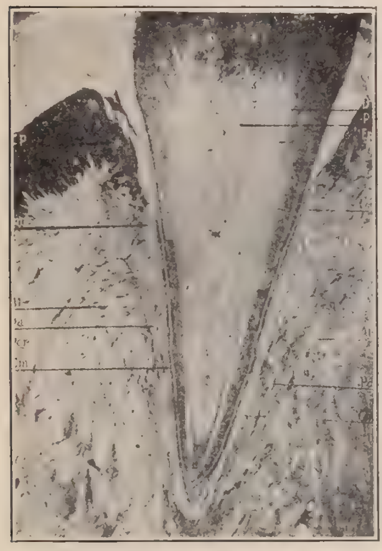


Fig. 2

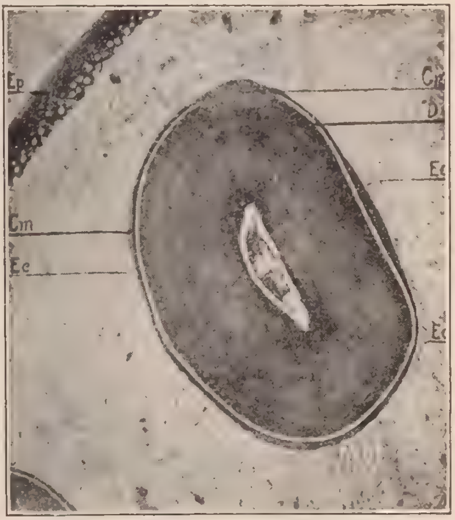


Fig. 3

This gum tissue is richly supplied with blood vessels, some nerves, and so-called glands of Serres's, which is a mass of small round cells in the interproximal gingivæ.

Fig. 1*.—Is from a longitudinal section at the gum margin and shows the dentin, the epithelial covering of the gum tissue, the cementum, and the fibrous connection between cementum and gum tissue.

Fig. 2.—Taken a little lower down shows relation of fibers to alveolus—to the periosteum.

Fig. 3.—Is from a cross section showing the strong fibers' connection from the cementum to the bone at the edge of the alveolar border.

Fig. 4.—Is a cross section showing fibers passing from tooth to tooth over the edge of the alveolar septum between the teeth.

These fibers are interlaced with the fibers of the true periosteum and

---

*In an article on "The Contact Point in Relation to Diseases of the Gum Tissue," in July *Dental Review*, Dr. MaWhinney used these same illustrations and the *Review* publishers have kindly loaned us the cuts for illustration of the present paper.—Editor.

with the fibrous gum tissue and serve to give a good idea of the strong support afforded the interproximal gum tissue.

The interlacing of these fibers not only serves to hold the gum tissue in proper place, but also serves to hold the teeth and the alveolus in proper relation as well.

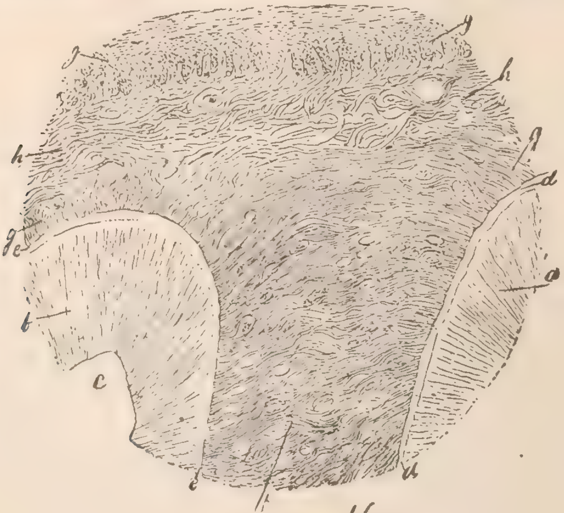


Fig. 4

Fig. 4

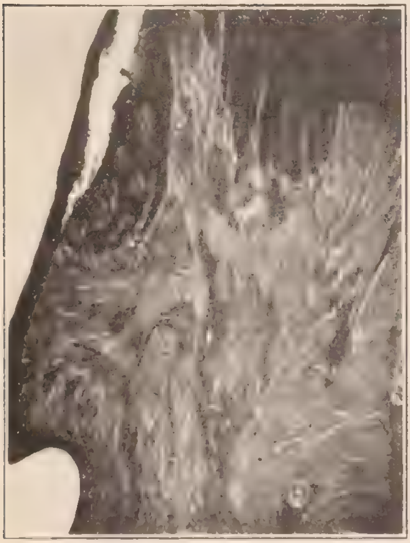


Fig. 5

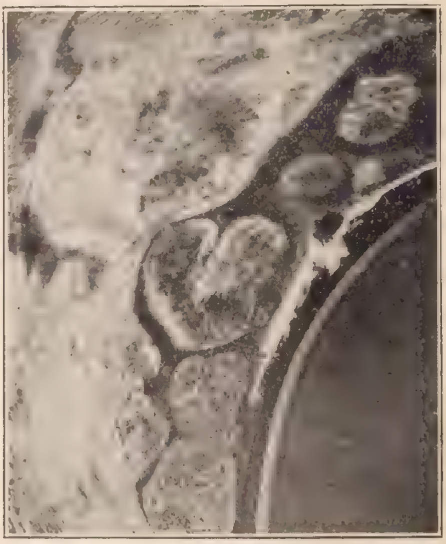


Fig. 7

Fig. 5.—Gum tissues which show the so-called glands of Serres's as well as the epithelial structures of the mucous membrane.

This so-called gland of Serres's is a lobular group of cells lying close against the enamel of the tooth on the proximal side, which in general appearance seems to be a gland but it has no glandular lumen and no ducts, and is, therefore, not strictly a gland.

It may have some connection with the epithelial glands of the peridental membrane which in many specimens seems to run into it.

Fig. 6.—Is from a larger magnification and shows particularly well the relations this gland bears to the epithelial structures of the mucous membrane covering.

Especial attention is called to the loose epithelial arrangement under the free margin of the gums as compared with the epithelial covering of the exposed mucous surface. This explains why this gum tissue under its free margin is so easily injured by ligatures, clamps, separators, etc., and when injured is so liable to take infection.

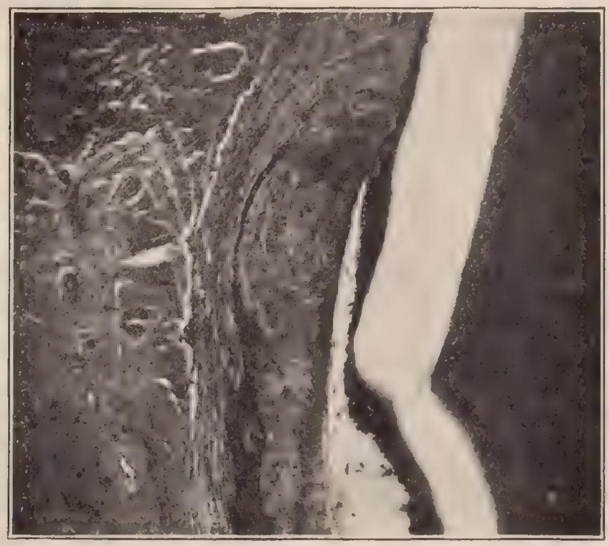


Fig. 6

Fig. 7.—Is from a cross section through the gland of Serres and shows the arrangement of the round cells.

A knowledge of this minute histology is imperative to successful, careful operating upon the teeth, especially where the gum tissue is involved or adjacent to the immediate field of operation. Particularly should we always keep in mind the fibrous connection between the gum, the periosteum of the alveolar border and the tooth neck, which is really the most important soft tissue of the mouth.

The necks of the teeth are normally bathed in mucous secretions. This secretion seems to have the normal function of keeping the teeth surfaces under the gingival border clean as well as the gum tissue. Any disturbance of this secretion portends trouble. From a pathological standpoint I have come to regard the interproximal gum tissue as the most important of

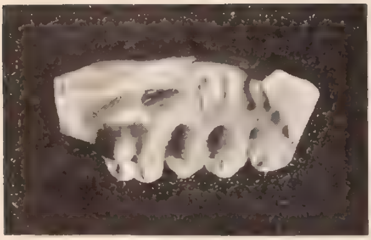


Fig. 8

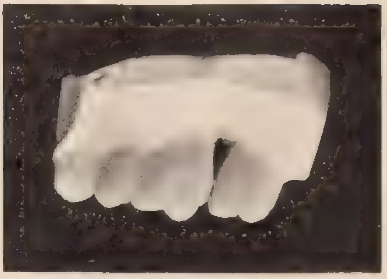


Fig. 9

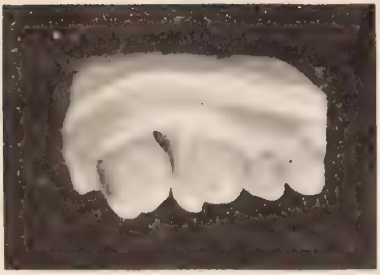


Fig. 10

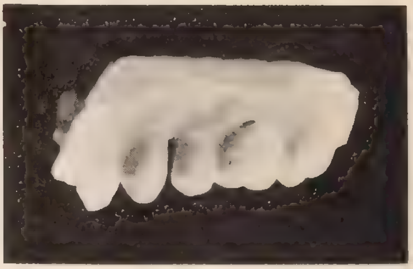


Fig. 11

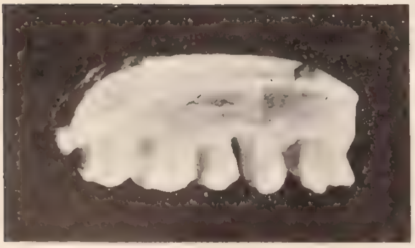


Fig. 12

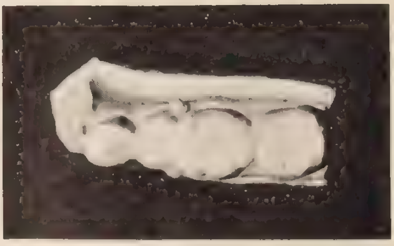


Fig. 13

all soft tissues of the mouth. From careful clinical observation over a number of years I have gathered data which shows that fully 80 per cent. of all serious gum diseases begin or make first appearance in this tissue.

When from any cause the interproximal gum tissue recedes from its normal position it invites disease. When the normal contact point is lost, the natural protector of the interproximal gum tissue is lost and then it is subject to irritation and permanent injury from crowding in of food and the use of toothpicks which that impels. The nature of the pathological condition depends largely upon the local conditions in each individual case.

The following illustrations taken from clinical cases will serve to emphasize a variety of conditions that may develop when normal contact is lost.

Fig. 8.—Shows normal contact lost by decay, only partially restored by filling.

The fillings were excellently placed but for this one slight defect which may have been slightly increased by the extraction of the second molar, allowing the first molar to drop back slightly.

The jamming in of food into this interproximal space during mastication has brought about a serious inflammation with usual swelling, inviting infection which in this case has occurred within the gum tissue itself on its lingual aspect, forming a gingival abscess instead of suppuration between the gum and tooth neck as usually occurs. In this class of cases the alveolar septum is soon lost either by absorption or necrosis. With the discharge of pus the tissue rapidly drops down, exposing the cemento-enamel junction on the tooth necks which soon become annoyingly sensitive. Unless a remedy be applied early these teeth will be lost from pyorrhea.

The remedy consists in restoring and maintaining the normal contact, but when that has been delayed until such serious inflammation has occurred it will require the greatest care to restore and maintain the usefulness of such affected teeth.

Fig. 9-10, are illustrations of the buccal and lingual sides of a similar case, but a more advanced stage of trouble. The normal contact point was worn flat.

The crowding of food past this contact point and use of toothpicks which that necessitated has brought about the absorption of the entire alveolar process between these teeth and complete recession of the gums to a point where restoration of normal contact will do little good, for already the second molar is practically lost from the resulting pyorrhea.

Figs. 11-12 represent the buccal and lingual aspects of an entirely different type of case. Here the normal contact was lost by decay on the proximal surfaces of second bicuspid and first molar. The occlusion was such that these teeth dropped together, opening up the contact between first and second bicuspids as shown. When fillings were placed sufficient separation was not made to close the normal contacts between the bicuspids. The usual sequence followed.

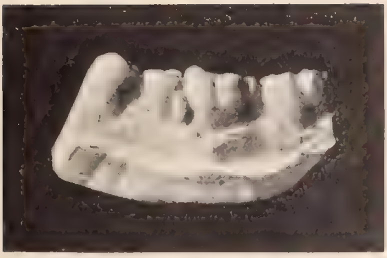


Fig. 14

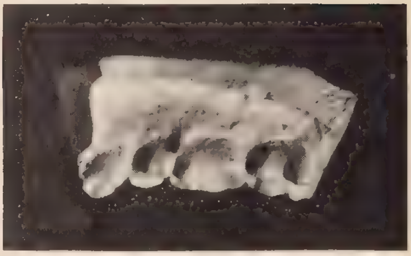


Fig. 15

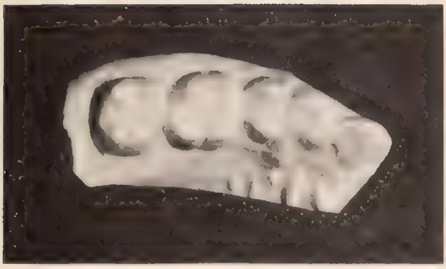


Fig. 16

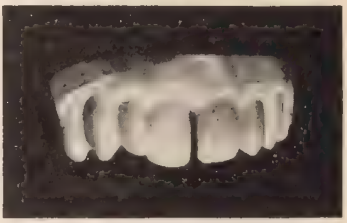


Fig. 17

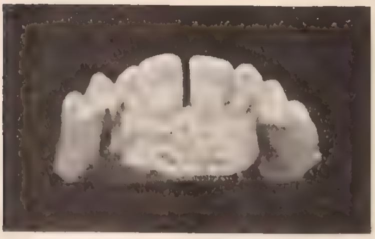


Fig. 18

The destruction of the fibers on the disto-proximal surface of the first bicuspid caused that tooth to be drawn out of position mesially, which allowed of still greater irritation, destruction and infection until, as shown in the picture, both first bicuspid and cuspid are entirely out of line, and lost their normal occlusion. In fact, the first bicuspid was so loosened and the tissues so swollen that it looked as if that tooth was lost. Treatment consisted in restoring normal contact and normal interproximal space between the first molar and second bicuspid, then after thorough curetting the pyorrheal pockets the first bicuspid and cuspid were restored to normal position and normal occlusion established and retained.

Fig. 13.—Is a photograph from the occlusal of the left lower molar and bicuspid region. It shows the contact point lost between the second bicuspid and first molar, lost by decay and dropped together by force of occlusion. When fillings were made no separation was previously made and consequently flat contacts were made which extend the whole depth of the fillings. Here the interproximal space is entirely obliterated and the gum has been forced out and is here shown as festooning along the embrasures.

Figs. 14-15 represent the buccal and lingual sides of this same case; note the extent to which this tissue has grown occlusally along the embrasures. The tumor-like growths were removed eight times in as many months only to return as you see them. The usefulness of that side of the mouth is ruined on account of these growths making mastication impossible.

The treatment of such cases is simple, and consists in restoring the interproximal space, removing these tumors, making proper fillings and nature will do the rest, except in this case there has developed a serious pyorrhea pocket on the buccal surface of the mesial root of the first molar as a consequence of debris collecting between the tooth and that projection of gum tissue.

We see similar growth of gum tissue where fillings are left rough and overhanging the gingival border of proximal cavities, also from poor fitting bands, accumulations of tartar, etc. A few cases have been reported where the growths of gum tissue became cancerous.

Fig. 16 represents the occlusal aspects of a similar case.

Here decay occurred in both bicuspids only. Fillings were placed which merely included the contact points, leaving the surface slightly flattened, which made it possible for food to crowd in with the tumor-like hypertrophies of gum tissue shown. Because of the food crowding annoyance the use of this side was abandoned, which further aggravated the trouble. The remedy is the same as for the previous case.

Figs. 17-18 are pictures of the labial and lingual sides of a case in which contact is lost between centrals.

Originally these teeth overlapped each other. In a laudable effort to make fillings that would not show on the mesial surfaces where decay had occurred at contact points wide separation was made. By the careless use of separator the principal fibers of the peridental membrane were torn from the cementum on the mesial side of the right central.

The proof of this is that the teeth did not return together but have since separated further until now, at the end of two years, a pyorrhea pocket exists which involves the entire mesial and most of the labial and lingual of the root of the right central.

Treatment of this case consists in proper scaling, polishing and medicating the tooth affected by pyorrhea alveolaris, restoring the teeth to normal position and retaining them permanently by a staple, as recommended by Case.

Your attention is called to this case because it is so common a type. I am fully persuaded that careless operative technique is responsible for much gum and peridental trouble, not only in the careless use of separators and wedges, but also from files, finishing strips, stones, enamel trimmers, silk, ligatures, etc. Many dentists do not seem to see beyond a cavity of decay or a tooth to be crowned and operate with no thought of the welfare of the soft tissues which surrounds the tooth.

The fact is that no filling, inlay or artificial crown, no matter how perfectly placed is of much value unless the health and integrity of these soft tissues, including gum, periosteum and peridental membrane be maintained.

Another interesting but recent case from practice was that of a lady of about 35 years, sent to me by her dentist for treatment for pyorrhea alveolaris, which he said involved all of the molars and bicuspids. He had been treating the case for over a year and had become discouraged.

Upon examination I found the molars and bicuspids badly loosened, the gum some swollen and very red, teeth very sensitive to thermal changes, sweets, etc. She stated that she had not been able to masticate for over two years.

I sent her back to her dentist and mailed him a note, calling attention to the poor interproximal contacts between all of the affected teeth and suggested a method of correcting it by replacing certain fillings after full separation and re-occluding.

A few days later she returned with a note from him stating that "You are a dandy if you can cure that trouble by any such means, for several of those contacts are as God made them and the others I made the best I know how, and I claim to know something about it. You have my consent and best wishes to go ahead."

I undertook the case, removing several fillings, properly separating, restoring contacts in normal teeth that had been lost, making proper fillings, inlays, etc., grinding occlusion at certain points—in short, restoring the harmony of all the teeth, which cured the pyorrhea, sensitiveness, etc., without any further or additional treatment.

(To be Continued.)

A THEORETIC CONSIDERATION OF THE EXPANSION AND CONTRACTION OF GOLD WHEN CAST UNDER PRESSURE

By C. J. Clark, D. D. S., Chicago, Ill.

ONE of the perplexing questions that has confronted the dental profession, and been the subject of controversy and discussion since the process of casting metal under pressure has been practiced, is the question of shrinkage and expansion. Of all the literature I have read pertaining to this intricate subject I have, so far, failed to find anything that gave a correct exposition of this question, or depicted a true scientific portrayal of the metamorphosic phenomena the metal undergoes in its transition from the molten to the solid state.

I have read ably written papers comparing the shrinkage of gold when cast under pressure, to the shrinkage of steel rails. I have perused columns of figures, carefully compiled, showing the degree of expansion and contraction of gold under normal conditions, but this is immaterial and not applicable; on the contrary, it is flagrantly fallacious when applied to gold cast under pressure, while the molten metal is confined within the unyielding embrace of rigid walls.

Of all the mechanical achievements that man can boast, there is not one that is not a modification of some mechanical principle utilized in the unfathomed laboratories of nature. In regard to the art of molding and casting, the same cosmic laws prevail with infallible accuracy, whether the proportions are the seething molten mass of an uncooled planet, or an insignificant globule of gold no larger than a pea. Science teaches that the planets and all the solar system, once existed in the form of nebulous or gaseous matter scattered throughout the boundless oceans of space, whirling and revolving, gradually cooling and growing denser, throwing off portions from what we may term parent bodies, and these cast off portions in turn throwing off other portions from their mass, until this sort of process in time evolved our solar system.

So for countless ages the matter of this earth existed in a molten state, gradually cooling and shrinking until the surface became rigid and the internal molten mass became encapsuled by a crust. As the shrinking continued, matter was called upon to supply the deficiency, and the crust being solid and rigid and held by the power of cohesion, the power of centrifugal force was greatest at the greatest circumference, and of course the portion of the revolving sphere that offered the least resistance (the poles) succumbed to the demands of the internal shrinkage and were drawn inward; and so we find the earth slightly concave at the poles.

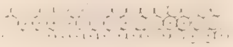
The cooling of the metal in a mold, while not exactly similar, is strikingly analogous to the cooling of a planet or the earth on which we live.

Foot-note:—This article is published simultaneously with *The Bur* by special agreement.—Editor.

Matter is never at rest; the atoms comprising the molecules revolving around a common center, forming a miniature solar system, are in a constant state of agitation, moving rapidly around in their medium of ether, and confined in their movement to the limited space between their fellows.

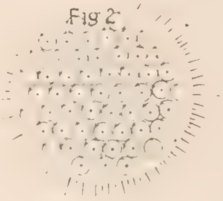
Now the outer surface of a mass of matter is the first to be susceptible to any thermal change, the effect being transmitted toward the center, and if this thermal change be of a sufficiently high degree to change the state of the mass from the solid to the liquid, or gaseous, or vice versa, the surface is the first to exhibit these manifestations. (Fig. 1.)

Fig. 1



Let us suppose Fig. 1 to represent a cross section of gold plate, magnified to such an extent that the molecules are visible, and represented by the small circles or spheres. Now, should this plate be subjected to a heat of a sufficient degree, the atoms of the molecules revolve more rapidly than before, become more divergent in their tendency, describing a larger circumference about their common center, the molecules increase in the same proportionate volume, and their mutual power of cohesion diminishes, and this allows the molecules to separate more widely, and permits of a greater latitude in which to exercise their mobility. As the atoms are whirling about their common center the molecules are revolving, and revolving also about each other, generating centrifugal force to such an extent as to overcome the force of gravity, and with a tendency towards projection in every direction; held in restraint only by the still active but greatly diminished power of cohesion. This causes some molecules to be lifted above their fellows and as heat increases the mass begins to assume a globular form. (Fig. 2) and presents a panorama of rhythmic harmonious action.

Fig. 2

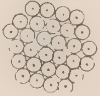


Now if the heat be withdrawn the revolutions of the atoms about their common centers decrease, and as their momentum gradually diminishes the atoms come into closer proximity, the molecules decrease in volume, the power of cohesion increases, the mutual attraction of the molecules becomes more intense, exhibiting more influence than the force of gravitation, and the congealing mass of metal retains more or less of the globular form; the molecules being caught in the act of falling much the same as water is caught and held in the formation of an icicle; see Fig. 3.

If this globule of gold were measured for its specific gravity it would be found that it developed, by the mutual attraction of its molecules (cohesion) a density that registers a relative specific gravity of 19.16. Thus, if gold, heated so as to assume the liquid state, be allowed to congeal uninfluenced by any interfering conditions, the only factors entering into the phenomena being mass, cohesion, heat, molecular mobility, volume and gravitation, it is a physical impossibility for the metal to develop, by virtue of its cohesive force, a density that registers a relative specific gravity above 19.16. In the casting of metal under pressure, additional factors enter, and must be taken into consideration; they are hydraulic pressure and welding, the latter being induced by the force of hydraulic pressure.

If a mold has been prepared in the usual procedure for a cast under pressure, and is in a condition for the reception of the molten metal, a button of gold fused in the crucible manifests the same physical phenomena previously described and represented by Fig. 2. The atoms will revolve around their common center more rapidly than at a lower temperature, and the molecules will revolve around each other in like manner and the metal is gradually transformed from the solid to the molten or liquid state.

Fig. 3

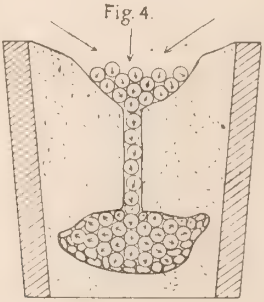


If force now be suddenly applied to the liquid mass in the crucible a portion of it will be forced by displacement into the mold, and if the pressure be maintained for a time it will be transmitted from molecule to molecule simultaneously in every conceivable direction, the hydraulic force pressing the molecules to all surfaces and angles of the mold. As the molecules at the surface of the mass come in sudden contact with the walls of the mold their movements are abruptly checked, the atoms of the molecules are forced to closer proximity, the molecules decrease in volume and have less latitude in which to exercise their mobility, which instantly induces congealation; and as they are held firmly against the walls of the mold, gaps and crevices occur, which are, however, filled by the pressure behind, and with inconceivable rapidity, with new recruits, frenzied and heat-maddened, where they meet the same fate as their fellows, crushed and jammed against each other and the walls of the mold until in congealing a rigid wall or capsule lines every surface and angle of the mold. (See Fig. 4.)

This goes on in the same way until the surface crust thickens to the center, all following the same regular order of things, but with no loss of appreciable time, in a small mass of gold as might be inferred from the deliberate description. This metal will be found to be of higher specific gravity than when it is allowed to cool under ordinary conditions. A pressure of 12 pounds induced by expanding gas will bring about a density or specific gravity of 19.45.

The duration of time in which the metal is transformed from a molten to a solid state is exceedingly short, and the fact that the metal retains enough heat to maintain a red color for a time, furnishes no scientific proof that the metal in the mold will shrink, for the metal that remains in the crucible and the metal in the mold encounter conditions in hardening that are diametrically opposed. The metal in the crucible is confined by no walls, and the pressure on it being from without inward has no such effect as on that confined in a mold, for the reason that the hydraulic pressure that the confined gold is subjected to forces the metal from the center outwardly as long as it remains molten, and thus it is pressed against the cooler walls where the crust as described is formed, and which will register a density of 19.45, against 19.16 of that remaining in the crucible, and there is no inherent force or physical property in the metal itself after being cast under pressure capable of augmenting its density to any further degree, so it is physically impossible for it to shrink. Therefore, if in the process of making an inlay or a more extended piece by casting under pressure any distortion occurs, or it is not a fac-simile of the wax model, the discrepancy must be ascribed to some other factor or cause than the shrinking of the gold.

Fig. 4.



References consulted on Expansion and Contraction of Metals:
(Chicago Public Library.)

Clark, D. K. A Manual of Rules, Tables and Data for Mechanical Engineers. 1878. *K 598.
Du Bois, A. J. Elementary Principles of Mechanics. Vol. 2. 1894. K 4982,2.
Dana, E. S. (ed.) American Journal of Science. Vol. 161. 1901. Ser.
Howe, H. M. Metallurgical Laboratory Notes. 1902. K 12780.
Hutton, W. S. Practical Engineer's Hand-Book. 1896. K 5405
Lineham, W J. Text-Book of Mechanical Engineering. 1894. K 4958.
Poynting, J. H. and Thomson, J. J. Text-Book of Physics. 1904. K 15930,3.
Rankine, W. J. M. Manual of Civil Engineering. 1891. K 661.
Useful Rules and Tables. 1873. K 665.
Thurston, R. H. Brasses, Bronzes and Other Alloys. 1900. K 5502,3.
Watson, W. Text-Book of Physics. 1905. K 15933.

DIFFICULT EXTRACTIONS AND THEIR MANAGEMENT

By Alfred W. Hall, D. D. S., Chicago, Ill.

(*Continued from Page* 960 *December Summary.*)

HAVING taken up the subject of anesthetics and their administration in the first installment of this article, we will now consider a few cases with special reference to instrumentation.

When extracting for a patient under nitrous oxid anesthesia, it is necessary that the operator should make every move count, and thus avoid the loss of valuable time. To do this it is essential that he should be thoroughly familiar with his instruments and know precisely what can be accomplished with each of them under the many different conditions that are constantly presented.

First to be considered are the mouth props and gag, as shown in figures 1 and 2.

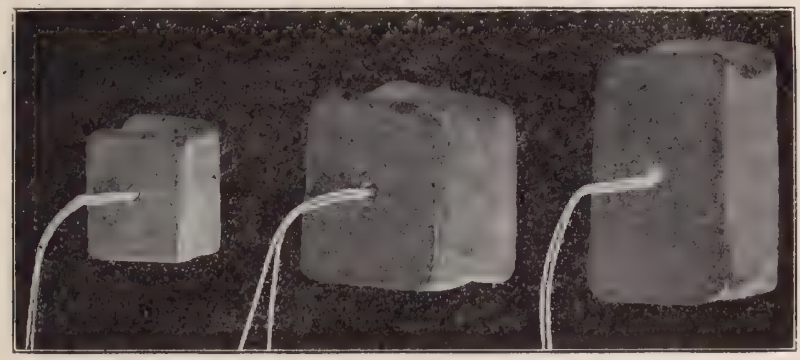


Fig. 1

Group Fig. 1 shows soft rubber props. These can be cut any size or shape desired from a block of rubber, and should be pierced through the center for the attachment of a strong cord, by which they can be recovered should they fall back into the throat.

Figure 2 represents a gag, its prongs covered with corrugated rubber tubing, to prevent injury to the teeth and gums. This gag may be used for opening the mouth after the patient is asleep, should it be necessary to use an extremely small prop on account of retching.

If we have extractions on both sides of the mouth, it may be necessary to place the prop on the left, and after completing the extracting on the right, to insert the gag on the side from which the teeth have been removed, thus forcing the jaws sufficiently apart to release the prop, exposing the teeth upon the left side for extraction (see figure 3). Or this procedure may be reversed.

When operating upon both upper and lower jaws, it is more expedient to take the lower teeth first, except when such a procedure would involve an extra shifting of the prop.

It is necessary to exercise some care inserting the gag, to avoid catching the lips, or forcing the jaws too widely open, as it is easy, if undue force is used, to throw the condyles out of their sockets.

Most successful extractors have had the experience of purchasing twenty or more forceps and, after experimenting with them all, to do the bulk of their work with four. Six or eight well selected forceps, supplemented by half a dozen elevators, will answer all requirements.

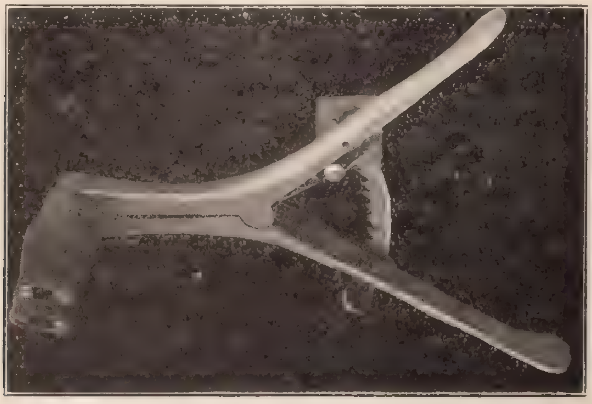


Fig. 2

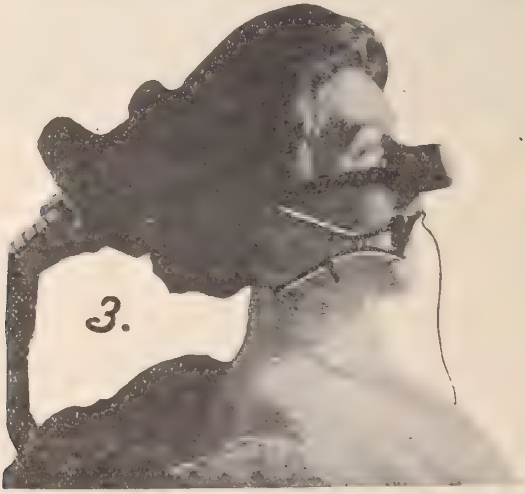


Fig. 3

The advantages to be derived from the use of elevators are:

1. Rapidity in operating.

2. Reducing to a minimum the liability of fracturing the maxillary bones or producing lacerations.

3. Their employment where forceps could not be used advantageously.

Those represented in Fig. 4, D, E, F, G, H and I will answer every purpose where elevators are indicated. For extracting impacted lower third molars, D and E are indicated, D being preferred unless the orifice of the oral cavity is extremely small, when it would be difficult to retract the lips sufficiently to introduce the blade of this elevator at the proper angle.

Before proceeding to operate for the removal of an impacted tooth, its exact position should be determined by X-Rays, and the abnormal condition and consequent difficulties explained in detail to the patient.

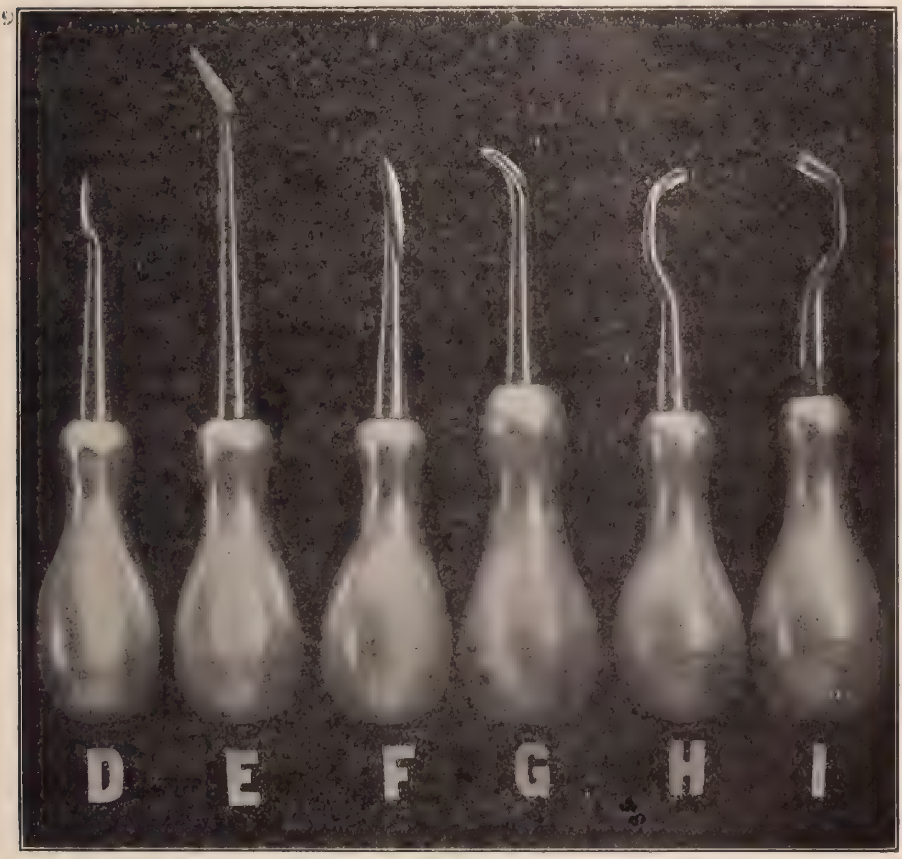


Fig. 4

If, with a finely pointed explorer, we can readily locate the mesial surface of an impacted lower third molar, its removal will be comparatively simple. Usually the external oblique line forms a dense plate of bone along the buccal, thoroughly embedding its mesial surface. If this condition exists it will be necessary to resort to the drill to cut away sufficient alveolar process to permit the insertion of the elevator beneath its mesial surface. When this is fully accomplished, the handle of the instrument is given a gentle turn, causing the convex side of the blade to glide over the marginal ridge, while the sharp edge engages the tooth, tipping it from its socket. In some cases it is necessary to disc off the mesial cusp of an impacted tooth to provide for it passing over the convexity on the distal of the second molar.

D, E and F are applicable for the removal of partially erupted lower third molars, the blade being inserted at their mesial buccal gingiva, and the handle of the instrument given a gentle turn, causing the convex surface of the instrument to glide over the distal surface of the second molar at its marginal aspect, and its sharp edges to engage the third molar.

Elevator G is applicable for removing roots of lower molars in cases where the crown has been destroyed by caries, which has extended through the bifurcation. In these cases the gum is often hypertrophied, obscuring the roots.

The blade of the elevator should be inserted through the small opening in the gum, retracting the tissue sufficiently to allow its concave surface to pass down along the buccal surface of the root, when a slight pressure lingually will dislodge the root. This procedure causes less laceration than forceps, and can be done very rapidly. The fingers of the left hand should be held on the lingual of the root, to protect the tongue.

Elevators H and I are right and left and are applicable on either side of the mouth, both for mesial and distal roots of lower molars. They are to be used with a scooping motion for elevating the remaining root of a lower molar, in case only one should come away with the crown. The blade is placed as nearly at the bottom of the socket from which the root has been extracted as possible, its concave side facing the root to be elevated, and by a scooping motion is forced through the septum of process, thus engaging the root and scooping it out.

Upper teeth as a rule are much easier to extract than the lowers, and for their extraction elevators are not indicated except in rare cases.

The number of teeth whose roots are in relation to the floor of the antrum is variable; the antrum may extend so far forward, especially in cases where the canine fossa is not pronounced, as to be in relation to all of the teeth of the true maxilla, from the cuspid to the third molar. This fact should be borne in mind by the extractor, as in some cases the roots of these teeth extend fairly into the antrum, their ends being covered only by a membrane, hence the danger of pushing a root into the maxillary sinus.

KICK and there's trouble brewing,
Whistle and life is gay,
And the world's in tune
Like a day in June
And the clouds all melt away.

CROWN AND BRIDGE WORK*

By J. H. Laudry, D. D. S., New Orleans, La.

I HAVE kept in touch with the best methods of crown and bridgework for twenty years and can enter with perfect propriety upon a discussion of the exercise of prudence in the application of the principles of crown work and bridging of spaces.

I do not propose to criticise or pass judgment upon methods that are freely used by others.

The very minutest detail of mechanical construction will not be given, feeling such to be unnecessary and I will deal with the broad underlying principles that govern the attachment of a foreign substance to a root in the mouth as a substitute for the lost crown, and the attachment of one tooth to another to support substitutes for the missing ones, calling upon them to perform duties belonging to the full membrane.

The experience and success of so many years has given this class of work the acknowledged right to be considered among the most useful and reputable operations of today; but the question arises, what has been the effect of its introduction to the dental profession, for good or evil? Like most all advanced methods, its benefits up to the present time have been in restoring and preserving roots and broken down crowns of teeth that would otherwise have been lost, thereby improving the power of mastication, prolonging life and health.

How many times has there been a loss of good roots and teeth through improper attachment for the purpose of withstanding a strain they were unable to bear, by injudicious fit—or badly fitting bands, causing irritation of the peridental membrane.

A perfect crown must provide:

Firstly—A natural appearance if for the anterior teeth.

Secondly—A Richmond or preferably a crescent band to guard against splitting weak roots.

Thirdly—The fit should be perfect so there can be no dislodgment.

Fourthly—To preserve the interproximate spaces and guard against all irritation.

Bridgework embodies all the foregoing dangers, increased proportionately to the greater strain it is called upon to bear.

The collection of particles of food or other decomposable matter between the ridge or under the gum may be avoided by making the surfaces and interspaces self-cleansing.

The Logan, Bonwill, Howe, Davis, White and all other porcelain crowns that are used have certainly the advantage of a more natural appearance for the anterior teeth, over a plate tooth backed by metal. Of the ready-made crown I consider the Logan less desirable owing to the shape, size and weakness of its pin, which has been the cause of many split roots.

---

*Read before the Louisiana State Dental Society, 1909.

Noting the value placed upon a band for the security of the crown to root for so many years, is gradually passing to a crescent or no band at all, because we hear on all sides "keep the neck of the teeth free from deposit of calculus or anything that might irritate the gums," and in the same breath we are told to "pass the bands up well under the free margin of the gum, regardless of such irritation."

Dr. E. Palmly Brown was the one who brought before the profession the system of porcelain bridges, anchored with gold fillings, malleted about a bar extending into the tooth.

Now the dental profession is greatly indebted to Dr. Taggart for his methods of casting gold inlays and for the attachment of crowns and bridges that will save the necessity of sacrificing the whole structure of many good teeth for bridging.

I very seldom use a band any more, it is unsightly, unnecessary, and with a good pin you get all the strength wanted, as all the force is outward. Sometimes a band is necessary in a lower tooth where recession of the gums has left space for a very short pin to be used and a good sized band can be used and not be seen.

In preparing roots for crowns I always seal the apex before reaming canal for the reception of a pin and much future trouble will be avoided.

The dowel should be made of platinum and iridium wire only, all other kinds are not safe if subjected to much heat.

Before crowning a tooth always devitalize. Should pyorrhea alveolaris develop after a few years in that mouth, those teeth will be free from the disease while one sound one after another will be lost unless they are carefully treated.

I never take an impression for crowning of the anterior teeth; my patients' mouths are my true models, and besides saves lots of time. Get size and shade of facing ready before the appointed time of patient.

After reducing the root to the desired shape, take No. 33 gauge pure gold and burnish to the root, leaving it a little overlapping in lingual portion to burnish over root that will take the shape of a crescent band. Should you desire a large crescent band fit one and solder to pure gold before burnishing same over root, then punch hole through plate and push pin to place, remove and solder (the pin having been previously closely fitted to the canal), replace same on root, reburnish to water tight joint and then trim to fit periphery of root. Grind facing to fit, back it up with No. 33 gauge gold, wax and attach the cap in mouth, remove crown, finish waxing as you want it, box cutting edge and sides, invest and solder. When polished you have a crown which fits perfectly over entire root and in cementing to place a thin film of cement will be caught between the attachment but not enough to weaken the strength of your crown. An open-faced crown is not a good anchorage for a bridge, for the attachment to be any way weak will cause a failure.

It is almost impossible to lay down any set rules to follow, but I will mention a few cases where a bridge will do good service. In making a bridge of twelve or fourteen teeth it is necessary to have not less than four good teeth or roots, including the two cuspids and two solidly set molars, that will carry a bridge for good service. In this case the cuspids should be cut off and crescent crowns used, the molars should be devitalized and two gold caps made for the abutment.

In case where right central and lateral are missing, left lateral and first and second bicuspid out, I would make that bridge in two pieces by using right cuspid and left central to carry right central and lateral, left cuspid and first molar to carry two left bicuspids and lateral. In all cases a good bridge can be made from a cuspid to a third molar. The two centrals will carry the two laterals and the laterals the two centrals and so on. A loose root, if properly treated, will get firm and strong again.

I will now touch lightly upon an important part to consider. In trimming molar teeth you should always have in mind what the shape of the tooth would be if cut across below the margin of the gum. The barrel shape entirely taken off to nearly one-sixteenth of an inch below the gum line leaving the sides of the tooth parallel so that the band will hug the tooth tightly. Take a lower first molar. The buccal side swells out very great, but the anterior surface not so much. After this tooth has been properly shaped it will be nearly square with the corners rounded.

In many cases after trimming the mesial and distal surfaces it will be necessary to trim only the lingual side, as the tooth often leans over towards the tongue, the band will pass over the enamel on buccal side and touch the tooth below gum margin.

The most difficult part to reach in trimming is the anterior surface of the lower molar. If you will take notice, an upper molar, when prepared, is found to be altogether different from the lower, being triangular in shape. This will sometimes vary, the palatal root being as broad as the two buccal roots, but not very often. A great deal must be cut from the mesial and distal surfaces of the posterior teeth and very little from the buccal and palatal or lingual sides. The cusps should be ground away, so a thick metal cusp can be placed on the band to insure a strong bridge.

THE CARE OF THE PROXIMAL SPACES*

By H. E. Friesell, D. D. S., Pittsburg, Pa.

IN a well formed arch, the proximal surfaces of the teeth are in contact near their occlusal margins; but as the mesio-distal diameter of a tooth is greater at the contact points than it is at the neck, considerable spaces occur between the necks of the teeth. These spaces are known as the Inter-proximal or V-shaped Spaces.

The average measurement of the dental arch, from the distal surface of the right third molar to the distal surface of the left third molar, on the line of the contact points, is given by Doctor Black as 127 millimeters (5 inches); the average measurement of the sixteen teeth at their necks is about 89 millimeters (3½ inches), the remaining 38 millimeters (1½ inches) representing the average measurement of the interproximal spaces, taken collectively.

The preservation of the ideal size and form of these interproximal spaces is imperative.

First. If sound proximal surfaces are to be protected from caries.

Second. If proximal fillings (perfectly made otherwise) are to prevent recurrence of decay.

Third. If the interproximal gum tissue is to remain comfortable and healthy.

It is a truth, pretty generally accepted by the dental profession today, that caries never commences on tooth surfaces that are actively scoured by the food in mastication; or in other words, decay never begins on a clean surface. It is also recognized that decay does not begin under healthy gum tissue, and that, on an unclean surface, decay stops at the gum line, never passing beneath the gum on the surface of the enamel.

Owing to their varying contour, we find that the larger portion of the proximal surfaces of the teeth belongs to the class of *unclean surfaces,* whereon caries will begin unless they are kept covered by healthy gum. We also find that the normal interproximal space is filled with healthy gum tissue, thus protecting these otherwise susceptible areas from the encroachment of caries.

So long as the interproximal space is filled with healthy gum, decay will not begin there. When anything interferes with this condition and decay attacks the proximal surfaces, if the cavities are properly filled and the interproximal space properly contoured, the gum tissue will again fill this space and decay will not recur.

IDEAL FORM OF INTERPROXIMAL SPACE

This gives rise to the question, "What is the ideal form of the interproximal space, and what conditions cause alterations in its form, or the loss of its gum tissue?"

Viewed from the labial, the buccal, or the lingual, with the soft tissues removed, the interproximal spaces are seen to be V-shaped, the base of the V being formed by the crest of the alveolar process, while the apex is at the contact point (Fig. 1). Viewed from the occlusal aspect, each space is seen to be divided by the point of contact into two spaces, opening toward the buccal and the lingual respectively. These are known as the buccal and the lingual embrasures (Fig. 2). They are horizontal spaces, which are given a V-shape by the rounding out and divergence of the two proximal surfaces as they pass from the point of contact toward the buccal and the lingual surfaces.

---

*Read before the Northern Ohio Dental Society, Cleveland, June, 1909.

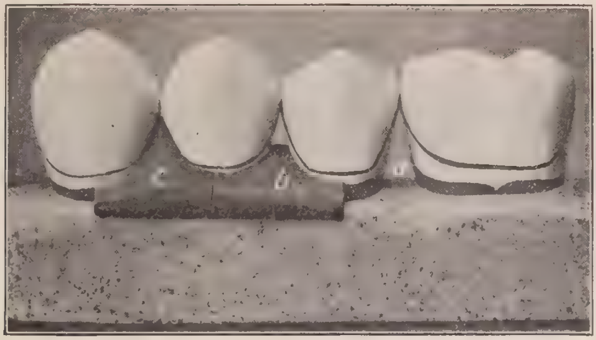


Fig. 1—Buccal view of model of teeth, process, interproximal space and gum tissue. (*a*) Interproximal space. (*b*) ''Meat hole,'' showing flattened gum septum. (*c*) Interproximal space normally filled with gum tissue.

It should be noted that the apex of the vertical V and of each of the two horizontal V's is a *point*.

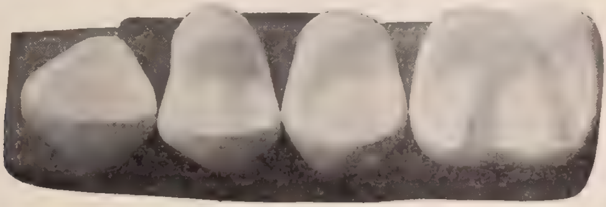


Fig 2—Buccal and lingual embrasures as seen from the occlusal aspect.

Owing to the greater convexity of the proximal surfaces of the bicuspids, their interproximal spaces are larger than are those between the incisors; and the molar spaces are somewhat larger than those of the bicuspids.

The points of proximal contact are located close to the occlusal surfaces, and on the bicuspids and molars they are placed much nearer to the buccal than to the lingual (Fig. 3a), thus rendering the lingual embrasures on the bicuspids and molars larger than their buccal embrasures. As the incisors curve around the arch, it will be seen that their contact points are placed closer to the lingual than to the labial surfaces, thus rendering their labial embrasures larger than their lingual (Fig. 3b).

The mesial and distal boundaries of the interproximal space are formed by the proximal surfaces of the crowns of the teeth and that portion of the roots which may be protruding above the alveolar process.

If the mesio-distal diameter of the teeth be shortened through decay or wear of their proximal surfaces, the teeth will, through the force of mastication, move toward each other until the most prominent parts of their proximal surfaces are again in contact. This moving together of the teeth is accomplished at the expense of the interproximal space; and just in proportion as this space is lessened, the crest of the interproximal gum tissue will be lowered, and more of the area of proximal enamel will be exposed to the action of caries.

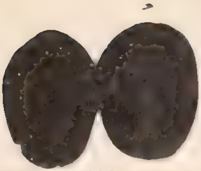


Fig. 4—"Surface" of Contact.

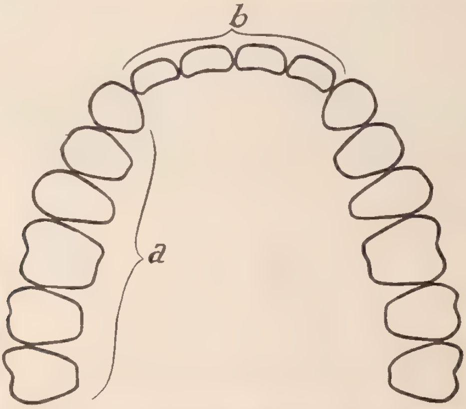


Fig. 3—(*a*) Contact points near buccal, showing large lingual and small buccal embrasures. (*b*) Contact points near lingual, showing large labial and small lingual embrasures between the incisors.

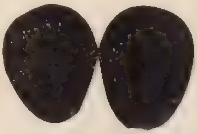


Fig. 5—"Point" of Contact.

The ideal form of contact point is a very small point, rounding away in all directions. It should not be a contact surface (Fig. 4), but should resemble the contact of two marbles or spheres (Fig. 5). Many teeth are formed with surfaces of contact instead of points, which is a faulty development, and these teeth suffer more from proximal decay than do teeth that are of better form.

NORMAL WEAR OF CONTACT POINTS

On account of the slight movement of the teeth in their sockets during mastication, they rub forcibly against each other at their points of contact; and while this wear is very slow, it amounts to considerable in a period of years. In some cases as much as a centimeter (two-fifths of an inch) is lost in this way, from the shortening or flattening of the contact points. In middle-aged and older persons this condition frequently presents a grave aspect, inasmuch as food matter is caught between the flat contact surfaces and forced down upon the interproximal gum tissue in such a manner as to cause great discomfort and to seriously interfere with mastication, even though there be no cavities in the teeth. If the operator has a sufficient knowledge of the proper shape and position of contact points, and will separate such teeth and make these contact points, he will find the source of discomfort removed, the dental apparatus restored to usefulness, and a very grateful patient.

No matter how thoroughly the other steps of a proximal filling may be performed, if the full mesio-distal breadth of the tooth is not restored by making properly shaped contact points, the filling cannot be considered perfect.

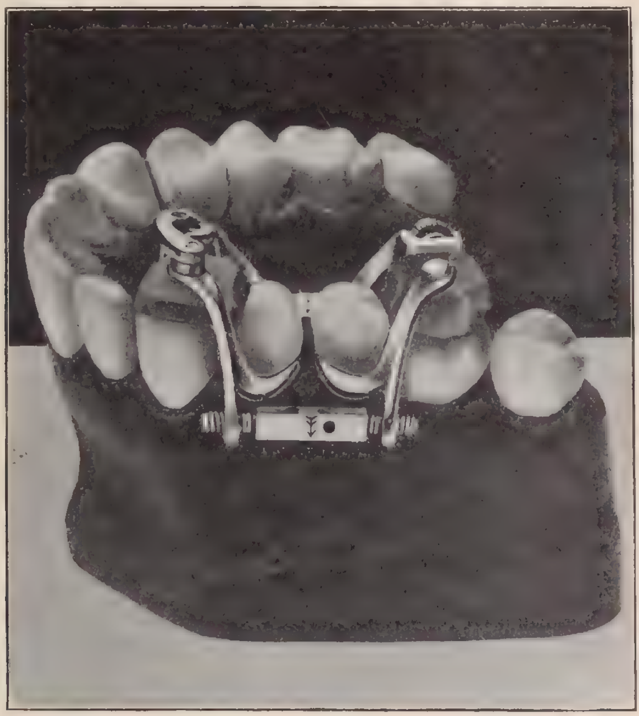


Fig. 6—Model with Perry separator in position, bows supported by gutta percha and teeth separated sufficiently to allow for full approximal restoration and finishing.

When restoration of the proximal surfaces is needed, separation must generally be secured; and for this work your essayist prefers the Perry separator, believing that it is the only one that can be applied with safety and convenience. Its use in proximal work is indispensable. The accompanying model shows the separator in position, the teeth having been lifted apart sufficiently to permit full restoration and to allow for a little additional space for finishing the filling (Fig. 6).

GUM TISSUE SHOULD FILL INTERPROXIMAL SPACE

Normally the interproximal spaces are filled with gum tissue; and this is the case where the proper space is maintained, provided the attachment of the soft tissues is not altered by pathological or mechanical interference. In this connection it should be remembered that the normal space is dependent upon the full rounded contact point (Fig 1c).

The gum tissue which fills the interproximal space is a continuation, or prolongation, of that which covers the buccal and the lingual surfaces of the alveolar process. It contains many bundles of fibres from the peridental membrane, which hold it tightly against the tooth surface. The inner ends of these fibres are attached to the cementum as far crown-wise as the gingival line (the junction of the cementum and the enamel). Anything that interferes with the attachment of these fibres at the gingival line will allow the interproximal tissue to become relaxed and eventually to recede, leaving interproximal spaces not filled with gum tissue, and the proximal surfaces, therefore, liable to the attack of caries.

The deposition of calculus; the careless use of instruments in its removal; the encroachment of an improperly contoured crown band; the faulty trimming of a root for crowning; cavity outlines cut past the gingival line; excess of filling material left overhanging the gingival wall of a cavity; careless or rough use of finishing instruments in trimming proximal fillings to form—each of these things is liable to cut off the supporting fibres of the interproximal gum septum and cause it to recede.

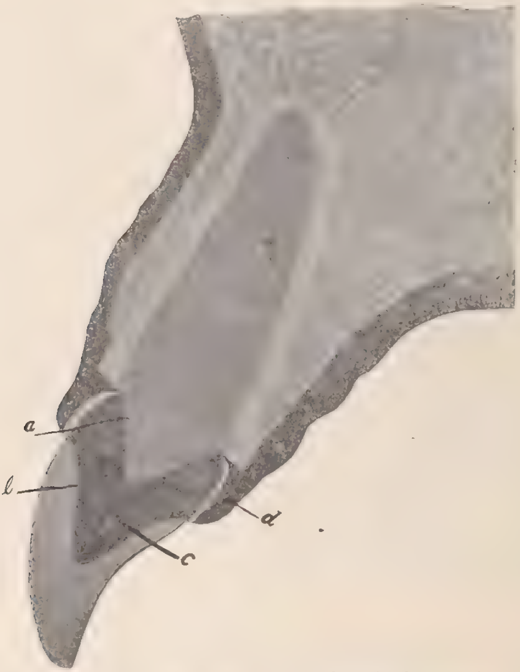


Fig. 7—(*a*) Gingival line. (*b*) Gum line. (*c*) Gingival margin. (*d*) Gum margin (in section).

DISTINCTION BETWEEN GINGIVAL LINE AND GUM LINE: GINGIVAL MARGIN AND GUM MARGIN

That this unfortunate condition may not be brought about through the oversight or carelessness of the operator, an intimate knowledge of the position of the gingival line and of the normal gum line is desirable. By gingival line is meant the line of junction of the enamel and the cementum; the gum line is the occlusal extremity of the gingiva, or gum tissue. The soft tissue extending from the gingival line to the gum line is known as the free gum margin, or gingiva; the enamel surface that is covered by the free gum margin is called the gingival margin (Fig. 7). All operations performed on the unclean portions of the axial surfaces of the teeth should be extended to the gingival of the gum line (i. e., under the free gum margin), but they should never reach the gingival line; nor should the attachment of the gum tissue at that point be interfered with in any way by the operator. Thus the gingival portion of the work will be covered and protected from decay by healthy gum tissue, which has not been relaxed by interference with the attachment of its supporting fibres.

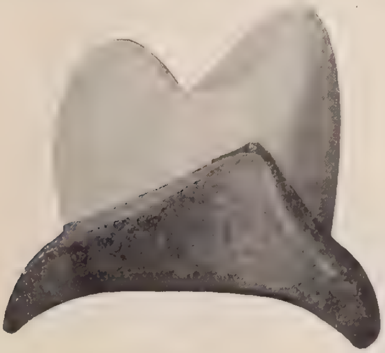


Fig. 8—Approximal view of normal gum septum, filling the interproximal space to the height of contour. The crest of the gum septum is directly beneath the contact point.

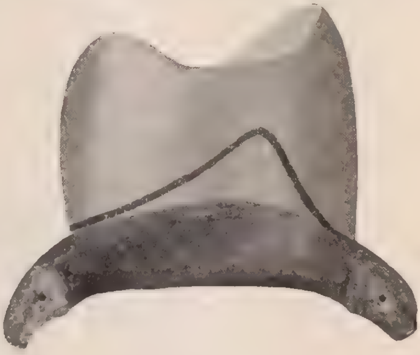


Fig. 9—Approximal view of interproximal gum septum flattened by the impaction of fibrous food matter that has been caught between flat contacts and forced against the gum, causing it to recede and leave exposed a portion of tooth surface that is normally covered by the interproximal gum tissue.

HEIGHT OF CONTOUR

If a line be drawn around the axial surfaces of the crown of a tooth, following the point of greatest lateral diameter, it will be seen to vary from the horizontal quite markedly. On the buccal and the lingual it will be concave, from the occlusal, approaching generally quite close to the gingival line. On the proximal surfaces it will be convex and reach its crest at the contact point, sloping rapidly toward the gingival as it passes through the buccal embrasure, and less abruptly as it passes through the lingual embrasure. This line marks the division of the clean and unclean surfaces of a tooth, and for want of a better name I have called it *the height of contour*. Normally, the gum tissue will extend practically to this line. Thus we have the interproximal gum tissue filling the space in the form of an unequal-sided V, when viewed from the mesial or the distal aspect, the crest of the V being at the contact point, the long arm sloping toward the lingual and the short arm toward the buccal (Fig. 8).

An interproximal space filled with a gum septum of such shape, and protected by two round contact points, offers the ideal protection to the proximal surfaces of the teeth. Fibres of food matter forced into the interproximal space in mastication will be broken by the contact point and diverted toward either the lingual or the labial embrasure, and swept clear thereof by the succeeding mass of food forced through the embrasure. Should the fibres pass the contact, the latter, if small (if a real contact *point*), will not hold them, but will permit the succeeding mass of food to carry them out toward the lingual or the buccal. On the other hand, if the contacts are broad and flat (surfaces instead of points), food fibres will be more readily caught between them and will not be drawn out by the sweep of food through the embrasures, but will gradually be pressed down by succeeding fibres and become impacted on the crest of the gum septum, crowding it away and leaving it flattened (Fig. 9), forming what have been very aptly termed "meat holes," the evacuation of which, by the use of a clumsy tooth pick, usually continues the destruction of the interproximal gum tissue, and leaves the proximal surfaces inviting colonization by caries fungi. (Figs. 1b and 10 b.)

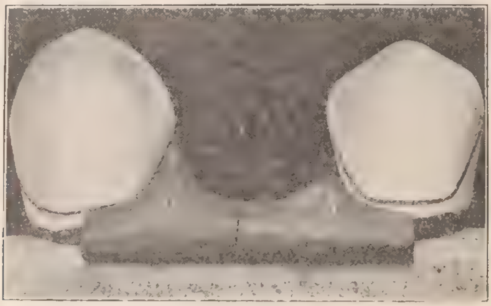


Fig 10—(*a*) Normal interproximal gum septum viewed from buccal aspect. (*b*) Flattened gum septum.

The late Dr. Harlan, many years ago, called attention to our very general lack of knowledge of the intimate anatomy of the teeth. That the criticism is to some extent true today is indicated by the numerous examples of failure on the part of operators to properly restore the form of lost tooth structure, to observe the proper relationship between the teeth and the soft tissues, or to recognize the variations in the line of junction of enamel and cementum.

VARYING CURVATURES OF GINGIVAL LINE

The gingival extremity of the enamel does not pass in a horizontal line around the tooth, as might be inferred from the root preparation and the crown work frequently seen. In fact the divergence from the horizontal is, on certain teeth, very much greater than would be supposed by one who has not been a careful observer of such things. Viewed from the occlusal, the gingival line, as it passes around the teeth, is concave on the buccal, labial and lingual surfaces, and convex on the mesial and distal, this proximal convexity being much greater on certain teeth than on others. For example, the average length of the central incisor crown, from the gingival line on the labial to the cutting edge, is ten millimeters; while on the mesial surface the gingival line approaches the cutting edge three millimeters closer, and in rare cases this curvature is four millimeters in extent.

On the other upper teeth the curvature of the gingival line toward the occlusal on the proximal surfaces is, on an average, as follows:

*Lateral	2.8 millimeters	First Molar	2.2 millimeters
Cuspid	2.5 millimeters	Second Molar	1.6 millimeters
First Bicuspid	1.1 millimeters	Third Molar	0.7 millimeters
Second Bicuspid	0.8 millimeters		

Note the gradual decline of curvature from central to second bicuspid, and the decided increase in the first molar.

The lower teeth present the following gingival curvature, viz:

Central	2.5 millimeters	Second Bicuspid	0.6 millimeters
Lateral	2.5 millimeters	First Molar	1.1 millimeters
Cuspid	2.9 millimeters	Second Molar	0.2 millimeters
First Bicuspid	0.8 millimeters	Third Molar	0.2 millimeters

The upper centrals and the lower cuspids present the greatest curvatures.

Note which teeth cannot be trimmed flat bucco-lingually for crowning without injuring the attachment of the peridental membrane and interproximal gum tissue.

INJURIOUS OPERATIONS

Many practitioners do not appreciate this curvature of the gingival line, and in operating cause much harm to the tissues at this point. In fact, irremediable injury more frequently results from non-observance of these conditions than we would care to acknowledge. Who can tell how many incurable diseases of the gum tissue or of the peridental membrane are started by the drawing of a ligature tightly around a tooth, causing it to impinge upon the peridental membrane at its proximal crest (Fig. 11). [Fig. 12 is not mentioned in text.]

If a scaling instrument is thrust through the interproximal space in the manner indicated in Fig. 13, is the condition of these parts made better or worse by the operation?

If a wedge separator is used, which creeps down and encroaches on the gum tissue as it is tightened, is it any wonder that occasionally permanent injury is done to these tissues?

If a marginal overhang of filling or inlay is left at the gingival, how can the free interproximal gum tissue be healthy and fill the space?

If the operator depends upon the use of strips and files for finishing these proximal surface fillings, is it any wonder that he frequently succeeds in removing not only the excess of filling material, but much of the interproximal gum tissue as well?

---

*Note: The figures given are from Black's Dental Anatomy.

It is the writer's belief that all dental operations involving the proximal surfaces of the teeth should be performed in such a manner as to cause no injury to the soft tissues, and to leave a normal interproximal space filled with healthy gum tissue to the height of contour. That portion of these surfaces which lies to the occlusal of the height of contour is scoured by the food in mastication, and decay will not begin upon it. It is a clean surface, and immune to caries so long as there are no faults in its enamel.

IMPORTANT STEPS

The important steps peculiar to proximal operations would then seem to be:

First. Sufficient separation of the teeth involved to permit of a proper interproximal space.

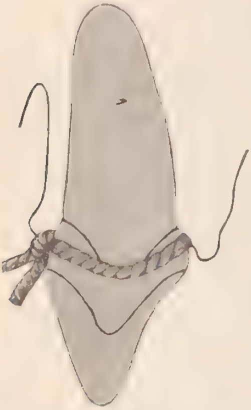


Fig. 11—Improper application of ligature.—(Black)

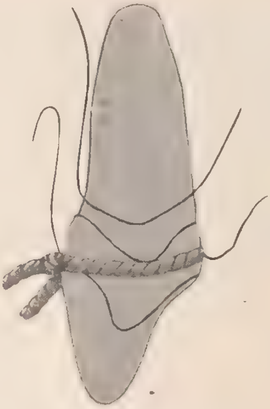


Fig. 12—Proper application of ligature.—(Black)

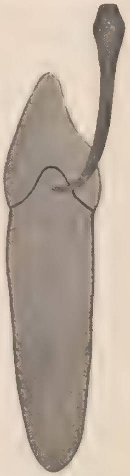


Fig. 13—Improper application of scaling instrument.

Second. The making of contact points of such prominence that they will hold the teeth apart and maintain this space, and yet of such small contact as to prevent fibrous food matter from being caught between them and thus crushing down the gum septum.

Third. The finishing of the proximal filling by methods that avoid injury of the gum tissue, and leave the proximal space so contoured as to invite the gum tissue to grow into and fill it, covering all of the unclean proximal surfaces. Let us consider each step in detail:

First. To accomplish this requirement, if extensive separation is necessary, the cavity may be filled overfull with base-plate gutta-percha, and the impact of the occluding teeth will, in a few weeks, produce the desired result. If the separation desired is not greater than can be obtained by the compression of the peridental membrane of the teeth to be separated, there is no instrument so well adapted for this purpose as the Perry separator, which is shown on the accompanying model (Fig. 6). This separator consists of two sets of claws, which clasp the two teeth that are to be separated and lift them apart. These claws permit of adjustment bucco-lingually and mesio-distally. They are first adjusted bucco-lingually, so that they are clear of the cavity outlines and thus out of the way. Then the teeth are lifted apart by turning a bar containing a right and a left thread. On account of the inclined plane formed by the proximal surface of a tooth as it extends toward the gingival, the tendency of the claws of all separators is to slide toward the gingival and to impinge on the soft tissues. The Perry separator has two bows connecting the buccal and lingual claws. These bows pass over the occlusal surfaces of the teeth, and if a ball of gutta-percha is heated and placed under each bow, and allowed to cool before the separator is tightened, the claws will be prevented from creeping toward the gingival, which is a point of great importance.

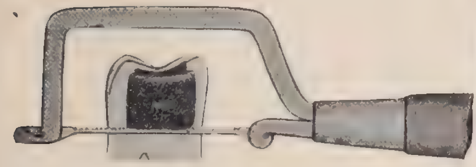


Fig. 14—Application of thread saw in Black saw-frame for removing surplus of filling material at gingival margin. —(Black)

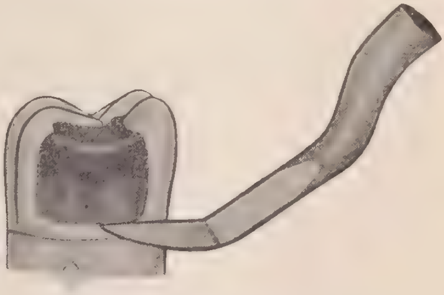


Fig. 15—Application of knife for shaving away very slight excess of filling material.—(Black)

Second. The making of a prominent proximal contour is provided for when proper separation is gained. The secret of making a small contact consists in finishing away all portions of the filling that would tend to broaden the contact, and is treated in the next step.

Third. Much of the injury to soft tissues, which frequently accompanies the finishing of proximal fillings, may be avoided if the finishing saw and the knives are used for this work, as taught by Dr. Black and shown in Figs. 14 and 15, which are taken from Black's great work on Operative Dentistry. A "thread" saw is introduced through the proximal space, with the teeth pointing toward the occlusal; the adjustable saw frame is attached, and most of the *excess* material between the gingival outline of the cavity and the contact point is very quickly removed by a few cuts of the saw. This is followed by the finishing knives, which are very sharp, and which shave off the remaining excess very conveniently and with much less annoyance to the patient than is caused by the use of coarse strips or files. The balance of the finishing may be done with suitable files, disks and strips. No disk is permitted to pass the contact point, and only the very finest strip is used sparingly for polishing it. In this manner no injury need be caused to the interproximal gum tissue, and yet the surface is very quickly and thoroughly finished; and these surfaces are left in such condition that a healthy gum fills the interproximal space, and there exists no cause of discomfort to prevent the use of the teeth in active, forceful mastication, without which result dental operations are a failure.

To summarize briefly:

The integrity of the proximal surfaces, or of operations thereon, as well as the comfort of the teeth and of the soft tissues, depends greatly upon the filling of the interproximal spaces by healthy gum tissue.

The filling of these spaces by healthy gum tissues depends upon the maintenance of the proper space, which is in turn dependent upon properly placed and shaped contact points, and upon the normal attachment of the gum tissues at the gingival line.

In order that the tissues of the interproximal space may be preserved, or if lost may be restored, it is imperative that the variations in position of the normal gum line and of the gingival line be given more careful consideration than is generally accorded to them.

SOME THOUGHTS ON THE ESTHETICS OF PROSTHESIS*

By Geo. H. Wilson, D. D. S., Cleveland, O.

FOR the purpose of establishing a clear idea of what we mean by "Esthetics of Prosthesis," we define the term "Prosthesis," as: The science, art and esthetics of restoring a lost dental organ, or organs, and associate parts with an artificial substitute.

To further make clear the subject, we must have well conceived ideas of the three terms, science, art and esthetics. Science is classified knowledge, therefore, is the involved theory. Art is a complex term—primarily, it means doing anything in a skilful manner; thus it is used to express perfection in any oft repeated mechanical work, as the manual labor in any of the useful trades, useful art; and to the working out of beautiful thoughts in concrete form, fine arts. As esthetics expresses the latter idea, we incorporate in our definition the two terms, *art* and *esthetics*. Art, to express the skilful doing of mechanical work, and esthetics, to express the harmonizing of our creation with its environment, or, the art of concealing art. Thus, in this paper, when we mean the skilful construction of mechanical appliances, we shall speak of art, artistic and artisan; but when we mean that which is more than mechanical art, the ideal, the beautiful, because harmonious, then we shall speak of the esthetic and esthetist or artist.

Is prosthetic dentistry a trade or a profession? That depends entirely upon how it is practiced. The science involved is not a factor in determining whether prosthesis as practiced is a trade or a profession; for both, the useful and fine arts may be highly scientific. If prosthesis is practiced as a utilitarian art, then it is, and can only be a trade; but if the utilitarian art is dominated by esthetics, then and only then can it justly be called a

*Read before the West Virginia State Dental Society, October, 1909.

profession. The Standard dictionary defines a profession as: "An occupation that properly involves a liberal education or its equivalent, and mental rather than manual labor." Hunters' Encyclopædic dictionary defines a profession as: "A business which one professes to understand and to practice for subsistence; a calling, occupation or vocation, superior to a trade or handicraft." Is it not conclusive that a commercial dental laboratory is practicing "mechanical dentistry" only? In order to practice prosthesis (Greek *pros* to, *tithemi* place, to place or restore), it is necessary that the patient shall be under the inspection and study of the operator so as to restore the contour and harmonize the associated parts. If one is to practice prosthesis as a profession, he must be more than an artisan; he must be an artist. It is a common saying that artists are born and not made. This saying, like most of its kind, is only in part true. However, we can say there are but two sources from which artists may be produced, namely: Cultivation and intuition. The idea of an artist being cultivated is in keeping with the Standard dictionary definition of a profession, that is: "A liberal education or its equivalent, and mental rather than manual labor." The artist must have, in addition to the manual dexterity of the artisan, the developed mentality and imagination that can create ideas and ideals, and then, with his artisan dexterity, he puts his ideals into concrete form; thus, he makes of his useful art, a fine art. He becomes an esthetist, an artist, and his calling is a profession. Therefore, if one would be an esthetic prosthetist, he must develop himself and broaden his art. The remaining source from which artists are produced that is, born, or as we classified the idea—intuition, is an unknown quantity and of uncertain value. However, for a dentist to depend upon intuition for producing esthetic work, would be like a preacher depending upon inspiration for his sermon; too often the product would be only perspiration. True it is that some people seem to have more natural ability than others, but it is more than probable that much of this seeming inherent or intuitive ability is the result of early cultivation in ways that have contributed to the final product.

There are two attributes of a man that are necessary for success in any line, namely: Desire and energy. Desire and energy is the celestial fire which will, when sufficiently strong, accomplish everything. Longfellow has well expressed the thought in his stanza:

"All the means of action—
The shapeless masses, the materials—
Lie everywhere about us. What we need
Is the celestial fire to change the flint
Into transparent crystals, bright and clear.
That fire is genius."

Some one has said that: "Genius is infinite capacity for painstaking." Thus we must conclude that if a dentist does not succeed in reaching high attainments, that the celestial fire within him is passive and not active; or, that his energies have not been well directed.

Thus far we have endeavored to establish—What is esthetics of prosthesis? and present the conclusion that it is: Applied, refined ideals of prosthesis, developed by earnest desire and well-directed energy.

The next phase of the subject to be considered in a cursory manner, is the science underlying the esthetics. I do not know that I can do this better than by re-stating a few paragraphs of a paper presented before the National Dental Association three years ago:

Before we proceed we must define the two words, "normal" and "natural." In his paper on "The Nomenclature of Orthodontia," (*Dental Cosmos,* vol. xlviii., p. 135), Dr. Guilford stated: "*Normal* does not mean natural, as one would often infer from its common use. Its definition is 'conforming to a type or standard.' Its synonyms are 'regular' and 'typical.' " *Natural* is pertaining to nature, as produced by nature. Thus we say the alignment of the teeth and profile of the face are natural, because they are as produced by nature; but they may or may not be normal. If they do not come to the line of harmony, they are not normal. If there is perfect harmony, then there is perfect beauty of form, dependent upon the beauty of the type.

We assume that the Creator designed that every soul should inhabit a perfect body. According to its type, it should be like the Greek creation Apollo, every line and every inch, godlike in its perfection. Had the original design prevailed, there could have been no beauty associated with the human form, because there would have been but one type, and each individual would have been a duplicate of all others. Beauty is appreciated by contrast only. The Creator also gave the laws of environment. Therefore, we have not two persons that are exact duplicates of each other. As the body is molded and shaped by external mental and physical influences through conception and gestation, and by both external and internal mental and physical influences through infancy, youth, adult and senility, there can be no perfect duplicate or absolute conformity to a given standard; and yet, how wonderfully alike are human beings!

Ethnologists, physiognomists, and other scientists, have divided and subdivided the human body into many classes for the purpose of better studying man. So far as prosthetists are concerned, our studies have been confined almost entirely to the Caucasian race, and we consider only such classification as will aid us in understanding the needs of our profession. We first divide the race into classes—light (blond) and dark (brunette)—a simple classification easily understood and which calls attention to certain facts. The next classification is into "temperaments," dividing the race into four or five classes, according to the classification chosen. These divisions, with their various combinations, will carry us much farther into the physiognomical study of our patients; will establish types, and teach us to note the variations in each subject from the type.

Another classification we may call the "dental profile" classification. Scientists consider this subject as a study of the facial angle, and make two general divisions—orthognathous and prognathous. This division is of little value to the dentists, yet the study of the profile is perhaps the most important of all the classifications for the prosthetists.

For convenience of study, we divide the dental profile into three classes —*straight* profile, *convex* profile and *concave* profile.

Scientists, in drawing the perpendicular line of the face, have it touch the most prominent point in the median line of the forehead and the most advanced portion of the maxillæ.

The dental profile line is somewhat different from the perpendicular facial angle line.

The first class, or straight profile, is the ideal Greek face. The perpendicular line has three points of contact—the frontal and mental eminences, and the middle of the wing of the nose. The lower lip will just touch the perpendicular line, and the upper lip will be a little in advance of the line. There is no question that this is the normal profile of the highest ideal of beauty.

The second class, or convex profile, has two points of contact with the perpendicular line—the frontal eminence and a point at the base of the nose that is the same distance from the middle of the back of the ear as the frontal eminence. In the type, this point will be the center of the wing of the nose.

The ideal standard of this class has the face made up of rounded, graceful curves; forehead high and slightly receding; nose, Greek or Roman type; lips, full but not coarse; chin, receding, but not weak; teeth, both number and alignment normal. No competent orthodontist would think of converting this ideal of our second class into the first or straight class, for he would recognize that the harmony of the features would be destroyed.

The third class, or concave profile, has the frontal and mental eminences only in contact with the perpendicular line. It is not possible to conceive of this profile being a mark of beauty, and it is fortunate that the class is small compared with the other two. It is a condition confronting the prosthetist, and he must place the features in as pleasing a relation to the concave curved line of the individual as possible.

The physiognomy of man is gradually changing and tending toward new types. The intermarriage of different nationalities and the modes of living, causing mental development and physical degeneracy, partly account for this condition. For the last few years, orthodontists have been impressing upon our attention the importance of teeth in the physiognomy of man, and giving us a rational reason for many of the abnormal conditions. This same study is of value to the prosthetist, as it aids him to understand the designs of nature for the individual case, and aids him also in classification. In studying the harmonies and inharmonies of the face, it is important that we consider the causes as well as the effects.

When the prosthetist has studied the individual case and classified it, he is confronted with the question: What is one's duty, to restore the features to the natural or to the normal conditions? It is apparent that a normal convex profile should not, in a portion of its outline, be converted into the concave type, and thus form an ogee monstrosity. Each individual case must be kept within its normal class, and then it is a matter of judgment for the prosthetist and patient to decide how much the natural peculiarities shall be modified.

It should be borne in mind that physiognomists make a distinction between the anatomy and the expression. Expression is of the soul, by or through the anatomy. Therefore, deformities of the anatomy may belie the soul. The prosthetist should study well to have the teeth of the proper size, color, form and arrangement to harmonize with the rest of the anatomy of the face. The esthetics of prosthesis may be expressed thus—"anatomical harmony" and "pleasing in expression."

I do not desire to imply that success in esthetics lies in committing to memory all of the tables on temperaments in the American System of Dentistry and the American Text-Book of Prosthetic Dentistry, although, if one is equal to the task, there is no objection to doing so, except the waste of time. However, the essential points must be learned and constantly used in practice. This can be readily accomplished by comprehensively reading and perhaps re-reading the articles a few times and then observing and studying people as opportunities present.

The profile is a fruitful field for study; however, little has been written upon this subject; but much may be learned by observation. The points to be observed in the profile are, the amount the jaws should be held apart and the contour and the relation of the lips to each other. There is much to be observed in the lips. They should be supported in harmony with the profile type. The lips may be thick or thin or the one thick and the other thin; and instead of being according to type, they may be an inherited idiosyncrasy that the prosthetist may be able to modify, and thus improve upon nature. The amount of motion of the lips in each case, requires careful study and consideration.

Another important field for study is the relation of the features of the face to each other, as to size and location. The artist, for the purpose of study, divided the ideal face into three equal parts: The upper third is from the hair line to the junction of the forehead with the bridge of the nose. The middle third is from the junction of the first and second third to the base of the nose. The lower third of the face includes the space from the base of the nose to the point of the chin.

Another artist's landmark is the size and location of the ear. It is equal in length to one-third of the length of the face and is placed directly back of the middle third of the face. It is often stated that in constructing dentures for an edentulous patient, that the artificial dentures must be of such length as to cause the lower third of the face to be of the same length as the nose. This would be an excellent rule if all faces were constructed upon ideal lines, but the exceptions are about as numerous as the rule; hence, the rule is of no value except as an aid to study.

The three component thirds of the face, and the length of the ear, are the four factors for estimating the ratio between any two portions of the face. By studying these portions, an idea of harmony can be established and thus, the length of the lower third of the face may be determined.

In conclusion, we contend that esthetics is an integral part of prosthetics and a field for useful study.

IS THERE ANY NECESSITY FOR THE USE OF PROPRIETARY PREPARATIONS IN THE PRACTICE OF DENTISTRY?

By J. P. Buckley, D. D. S., Ph. G., Chicago, Ill.

(Concluded from page 955 December Summary.)

MODIFIED EUCALYPTOL.

Mentholis, gr. ij.; Thymolis, gr. ij.; Eucalyptolis, f. 5. j. M. Sig. Use as directed.

Only a small amount of menthol and thymol added to the eucalyptol. Now thymol is used for the purpose for which I like thymol, because it has that favorable action, and the menthol is added to allay the irritating properties of the eucalyptol. If you add too much thymol you destroy the solvent power that the eucalyptol has for gutta percha.

Now, in a complicated abscess, where we have filled the roots and treated the tooth as best we can and pass it up to nature and nature does not seem to take care of the condition, we have to treat this case externally and surgically to remove the carious bone.

Whenever you have a pocket which results from an alveolar abscess you will find you can get the pocket to heal nicely if you fill the pocket with Beck's Bismuth paste.

BISMUTH PASTE (BECK).

Bismuth subnitrate, 30 parts; White wax, 5 parts; Paraffin, 5 parts; Vaselin, 60 parts. (Mix while boiling.)

When I have amputated a root there is nearly always pain following that operation. To avoid that pain, before I inject this Beck's bismuth paste, after I have operated, the first night I pack the socket I have made with orthoform and europhen paste:

Orthoform, 40 parts; Europhen, 60 parts; Liq. patrolati, q. s. M. ft. paste.

The idea in packing is this: Orthoform is absolutely worthless as a local anaesthetic for hypodermic injection because it is insoluble, but it is a specific for pain. It is not a disinfectant, but europhen is. You can pack that into the cavity where you have operated and the patient will not experience any pain, and when you remove that the next day you can see what you have done. The second day I fill the cavity with Beck's bismuth paste.

Here are some remedies that can be used where you have pain, whether it comes from an abscess or not, when you feel that you have done all you can locally and still your patient suffers, and where you know that the patient is going to experience pain for some time. You take care of the thing that is causing the infection and nature will take care of the infection. But in the meantime you can give some gentle hypnotic:

℞ Phenacetini; Salophen, aa gr. xx; Codeinæ sulph., gr. j. m.; Fiat chartulæ, No. 4. Sig. Take as directed.

You can give it in five grain doses, five grains of the phenacetin and one-fourth grain of codine.

℞ Pulveris acetanilidi, C. gr. xv; Fiat chartulæ, No. 2. Sig. Take one powder at once and the other in two hours if necessary.

PYORRHEA.

I am not going to spend much time on the treatment of pyorrhea. I will say this, that if you remove the deposits from the roots of the teeth and do not use any medicine the case will get well, if it is a case that can get well. If you fail to remove the deposits or dead tissue, and you use barrels full of medicine, the case will not get well. There is no specific for pyorrhea. I do not mean that you ought not to use medicines in treating pyorrhea, but if you use certain remedies intelligently you can hasten the healing process, you can aid nature in her effort to have those gums rehug the roots of the teeth, but I want to emphasize that unless you remove the cause your medicines will do no good. You will only make a bad condition worse. If you have the deposits removed from the roots, there is no reason on earth why you should not use an astringent remedy and prescribe a mouth wash that is antiseptic. The mouth wash that I often prescribe is also an official mouth wash. It is called liquoris antiseptic:

℞ Liquoris antiseptici, f. ℥. viij. Sig. Antiseptic mouth wash.

It is not necessary for you to remember everything in that—boric acid, thymol, oil of wintergreen, oil of thymol. If you forget and want to know what is in that remedy it is in a book you can get in the drug store. That is the beauty about prescribing an official or standard remedy. Instead of prescribing all of these things in it, all you need to do is to write a prescription for an antiseptic solution.

STOMATITIS.

℞ Potassie chloratis, ʒ. i. j.; Glycerite boroglycerini, f. ʒ. j.; Alcoholis, f. ℥. i. j.; Aquæ cinnamoni, q. s. ad f. ℥. viij.—m. Sig.—Antiseptic and astringent mouth wash.

GLYCEROL OF IODIN.

Zinci iodidi, gr. xv; Aquæ, mx; Iodi (Cays), gr. xxv; Glycerini, f. ʒ. j.—m. Sig.—Use as an astringent in pyorrhea and flabby gums.

Here is a formula for paste:

Calcii carbonatis, ppt. ʒ. iijss; Pulp. saponis (Merck's), ʒ. ss.; Sodii benzoatis, ʒ. j.; Cinnamonic aldehydi, mx.; Eucaliptolis, m. v. j.; Thymol; Saccharini, aa gr. v.; Glycerini, q. s. to make paste.

If you want a powder instead of a paste leave out the glycerine and cut down the soap.

I have tried to give you at least one remedy to offset the secret formula of more prominent proprietary remedies.

DISCUSSION

Dr. H. C. Kahlo, Indianapolis: I have felt a good deal of timidity all day in regard to the approach of this evening as far as my part on the program was concerned, because I had not received a copy of Dr. Buckley's paper. And my expectations were certainly fully realized when I arrived and found this array of formulæ before me. I hate to confess it, but I am utterly incapable of discussing this paper. I should be proud indeed to be equal to the occasion. But nevertheless I have enjoyed Dr. Buckley's lecture very, very much, it has been very instructive, and his ideas from beginning to end have been founded on facts and have been very clearly detailed.

Dr. Buckley we all know very well in Indiana and we appreciate and have appreciated for a long time that he is a scientist. His work tonight further demonstrates his scientific methods in the practice of dentistry. Many of us in this day and age of advancement in dentistry find ourselves more or less overwhelmed by the advancement of our profession and in our efforts to keep abreast of the times we neglect some of the very important things connected with the practice of dentistry. One of the errors most common is this very thing that the doctor has brought out tonight. We are unscientific in the use of our therapeutics. We find it so handy in many instances to take hold of some proprietary remedy which we know actually nothing about, beyond hearsay, or perhaps, the experience of a fellow practitioner; but we go ahead and use it because it is easily obtained, and we justify ourselves in the thought that it is put on the market by some thoroughly reliable manufacturer. I think we allow ourselves to be carried away with that thought too much.

Now, Dr. Buckley's ideas in regard to root filling were especially interesting to me. They were clear in every way and I like the whole system of his work in that direction. We should feel very grateful to Dr. Buckley for his generosity in allowing us to copy these interesting and very practical formulæ, and I hope he will extend his generosity still further and allow these formulæ to appear as a part of the proceedings to appear in the Dental Summary in connection with his lecture tonight.

Dr. G. E. Hunt, Indianapolis: I consider that Dr. Buckley has really revolutionized our root canal treatment in the last few years by his use of the various formulæ before us, and the point that I want to emphasize, and which he emphasized, is that you do not have to use proprietary remedies; there are no drugs known to the makers of proprietary remedies that are not known to the makers of the pharmacopeia, and there is no reason why you should pay the extortionate price asked for these compounds when your druggist or you can make them. Another very potent reason is, if you do use them and should be sued for malpractice, and a very astute lawyer begins to question you and asks you what you used, and you say ''I used ——— (whatever is the name of the remedy),'' and he says ''What is in it?'' and you say ''I do not know,'' if it is a jury trial you are going to get the worst of it. There is absolutely no reason at all why you should use these proprietary remedies, except in a case where a reputable house gives you the absolute formula of the article itself, and many of them do.

I do not think that Dr. Buckley, and I am sure *I* would not object to the use of a compound of that character where you know what the ingredients are and what are the proportions. Sometimes the manufacturing chemist is able to put these up in better shape than the ordinary druggist is. But when a manufacturing chemist, whether he be great or obscure, comes to us and wants us to use an article the ingredients of which he cannot and will not disclose, I think it is very foolish for any of us to use them. We are promoting something that is inimical to our interests, and every purchase adds to the increase of the proprietary drugs put upon the market.

I think Dr. Buckley has shown us it is unnecessary to use these drugs if we will apply the information that those of our profession who have made a study of it give to us. I commend the paper very highly, as I am able to do everything that Dr. Buckley says and does.

Dr. R. R. Gillis, Hammond: When I saw Dr. Buckley's name upon the program I knew if I heard only this one thing that I would be well repaid for the trip to Indianapolis, and after hearing him go through this discourse it makes me feel so enthusiastic that I could throw up my hat and shout.

But Dr. Buckley has one little formula, something that can be used by every dentist, and I would like to ask him to give us that formula. It is a very simple little thing, but something we can all use.

Dr. W. R. Meeker, Peru, Ind.: I have two questions I would like to ask, and that is in regard to whether the amount of cocaine is sufficient to prevent that severe pain which often follows the use of paste, and the other is if creosote and tricresol are the same preparation.

Dr. L. H. Wirt, Muncie, Ind.: I would like to call attention to a statement about the use of an antiseptic wash. It does not seem to me there is any need of putting an antiseptic in the mouth if it is in a healthy condition.

Dr. W. C. Hessler, Crawfordsville, Ind.: This is perhaps a quiz turned around. We would rather quiz the doctor than have him quiz us. I would like to ask the difference between the alkaloidal cocaine in his arsenic preparation and the cocaine hydrochlorate. I do not believe I have seen a preparation of the alkaloid, but I have seen the hydrochlorate. I would like to know more about the alkaloid so I would know what I was purchasing. I have always been under the impression that the hydrochlorate was the only form in which we can buy the alkaloid, ready for compounding with other drugs.

Dr. H. B. Tileston, Louisville, Ky.: We had Dr. Buckley in Louisville a year or two ago and I had the pleasure of listening to a talk very similar to the one he has given us tonight, and if I knew anywhere he was going to repeat it tomorrow night I would go to hear it again.

I think he has a habit of offering an apology about not having a paper. That's what he did with us, and after he got through we congratulated ourselves that he had given us a talk instead, because it would have been impossible for him to have prepared and read a paper and given the information that he has condensed into this talk:—to have made it as interesting to us. It seems like reading a fascinating story; we are deeply interested from beginning to end and at the same time are taught so many things. I can testify as to the value of these prescriptions, particularly the first four or five.

The devitalizing paste can be used absolutely painlessly if it is applied without pressure. The amount of cocaine is sufficient to benumb the pulp but it does not interfere with the devitalizing effect of the arsenic. The cresol and formalin preparation is a specific, and is to be relied upon for use in cases of putrescent pulps. Cresol is the official name for what was formerly called tricresol. Phenol, as you know, is official for carbolic acid. Another preparation that is especially good is his liniment composed of iodin, chloroform and aconite.

Now, the doctor's talk was in answer to the question, "Are we justified in using proprietary remedies?" If there was any reason for using them before Dr. Buckley started, there certainly is none left. There is no excuse for us to use remedies of which we do not know the ingredients, because here we have everything that is necessary to accomplish the ends that are desired and I would advise you to make copies of these formulæ, for, while Dr. Buckley is preparing a book which doubtless you will get, you will not have it as soon as you will want to use some of these remedies.

Dr. J. P. Buckley, Chicago, Ill., (Closing the discussion): It is not always that I get off as easily as I have tonight, and I do not know that I enjoy it any better. In fact, I think sometimes I can talk better if some one disagrees with me, not that I would not be convinced if I were wrong, but I would at least make the other man show me wherein I was wrong. So, while I have enjoyed these complimentary remarks, I would have enjoyed it equally as well if someone had taken issue with me. In fact, I tried to avoid getting into the root canal proposition because I did not think all would agree.

Dr. Tileston is really a good guesser. I have known him a long while and I had the pleasure of enjoying the hospitality of his home in Louisville, and he guessed right when he said that I could not put this into a formal paper because I could not make it interesting to you to read it.

This liniment to which the doctor refers acts as a sedative. If you will apply it to the gum it will allay the pain in that region.

Now, alkaloids are a nitrogenous compound. It is a good deal like a ptomaine. All alkaloids are insoluble. You can take the alkaloids and act upon them with an acid and it will make a salt of that alkaloid. Zinc with hydrochloric acid makes zinc chlorid. That same thing is true with the alkaloids. So far as the solubility is concerned, the alkaloid and salt are opposite. The thing that the salt is insoluble in the alkaloid is soluble in, and vice versa. I never use morphin, as such I always give morphin sulphate. I never inject cocain because it is insoluble, but use cocain hydrochloride. The cocain in the devitalizing paste will control the irritating action of the arsenic if the tooth is not aching. The tooth will ache worse for an hour or two if you apply that paste at that time, but in any other condition the cocain will control absolutely the action of the arsenic without interfering with its devitalizing power.

Cresol is now recognized and is the same thing as tricresol. A great many druggists have tried to convince me that liquor of cresol was cresol and that tricresol was the thing that I wanted.

I could not get along without cinnamon water, but I do not know that I need to take your time to explain. Dr. Hunt said that if you want to know about a remedy you could get the information from the pharmacopeia. I will add two other books to that. One is the National Formulæ and another is an issue of the Council of Pharmacy, which contains all of the unofficial remedies to which there is no objection. Of course, we ought to use the remedies Eli Lilly, for example, puts out. There is nothing about them that is secret. I think some house ought to be induced to put up and sell dental remedies. There is no reason why the medical men cannot get anything they want, but we cannot. There would be a great sale for such remedies and they would not lose anything financially. Dr. Kahlo referred to the expense of the remedy. You pay about $1.50 to $2.00 for a bottle of something you know nothing about. You may get the same result, *of course,* but you ought to know what is in your remedy and why your result is brought about.

I think I was rather awkward when I said I foolishly consented to come down here. You may think I did not want to come. I practice in Illinois, but farm in Indiana, so I have a tender spot for Hoosier dentists, and I did not mean that as you might have taken it. I should not have come because I am writing a book. I have been waiting for ten years for somebody to write a book on this subject and finally I signed a contract to have a book out by the first of March and my wife and boy are almost sorry I signed that contract. My boy said, "I wish you didn't have to write so much, papa, so you could play with me," and he is justified in making the statement for I have worked every minute. That is the reason I made the statement that I did. Now, that I am here, I am going to take a week off and then go home and work again until the book is finished. I do not say this by way of advertising, but to explain the statement I made. I want to thank you, Mr. Chairman, and the association for the kind attention you have given me.

PYORRHEA ALVEOLARIS—A PLEA TO THE GENERAL PRACTITIONER

By E. E. Voyles, D. D. S., Indianapolis, Ind.

(Concluded from Page 950 December Summary.)

MEDICATION.

For this I use a syringe that can be sterilized. The one known as Sub-Q syringe most nearly meets the requirements. The barrel is glass, the plunger is glass wound with asbestos; it has a hub of metal that can be screwed on. The needle is soft and can be bent to any shape. This is something that can be sterilized without much trouble and as it costs only $1.50 there is no use trying to force medicine around pouches with a toothpick wound with cotton. This syringe is always ready and will carry the medicine right to the spot where it is needed.

The tongue and cheek can be protected with rolls of cotton from any corrosive agent, and a corrosive agent must be used and in sufficient strength to make a profound impression on the tissues with which it comes in contact. If I decide to use lactic acid I use it in full strength and have it warm so it will be a few degrees above body temperature, introduce the syringe and slowly fill the pocket, taking up any surplus with pledgets of cotton so that the medicament does not run over the margin of the pocket.

If the case indicates a little more severe corrosive, I use tri-chloracetic acid, from 15 to 40%, depending upon the depth and nature of the pocket into which I wish to inject it, 15% being about as weak as will have much effect. I make the solution in water that is about 115%to begin with which brings it to about the right temperature. Placing the needle to the extreme bottom of the pocket, I slowly withdraw it, allowing the pocket to fill. This will thoroughly coagulate the surface of the pocket so that the tissues will be almost solid. I have tried nothing other than an absolutely corrosive acid which will have any beneficial effect in such cases as these. Nothing else is a solvent of bone or of concretions which may have been left upon the root. Sulphuric acid will do this but is a litte too destructive of the tissues about the root and of the tooth.

Such a corrosive will help to repair any operative deficiency of which we have been guilty and also act upon the soft tissues so as to absolutely destroy any micro-organisms or their spores and to make a new surface.

After the pocket has been thoroughly injected and concreted and coagulated, I leave it alone and tell the patient to keep his fingers off it. A great many people, when they get a knock on the head and 15 or 20 hairs are sore, want to be feeling that all the time and they will do the same thing to a tooth. I instruct the patient that when he brushes the teeth that he use great care not to disturb this coagulum for a few days. The teeth can be brushed gently two or three times a day with a little bicarbonate of soda on the brush. It is not necessary for one to coddle his patients with a lot of this confectionery toothpowder composed of aromatics, chalk, analine dye and sugar. Rather give him something that he will be glad to brush out of his mouth after he has put it in there.

From a medicinal point of view it does not do a particle of good for a patient to wash his mouth with a lot of these antiseptic washes that are offered us and have it in his mouth about an eighth of a minute. It may make the mucous membrane feel a little intoxicated for about half a minute, but what good does it do? None. Their antiseptic properties are so weak as to be valueless as such. These things may be all right as a toilet preparation but for the treatment of pathologic conditions, NEVER.

With two or three exceptions these preparations show an acid reaction, and the continued use of a preparation which always shows an acid reaction must, of necessity, in the course of time, be deleterious to the teeth. The same effect will be caused by the continued use of a strong alkali.

It is the acute cases that often tax our ingenuity and resources to the limit. If the gums are very much inflamed, as they many times are in acute cases, I do not use the corrosive acid but cleanse off the surfaces with pledgets of cotton dipped in hydronapthol solution made slightly pleasant with a little cinnamon water. Remove as much of the concretions as can easily be reached, and wash them out with warm boracic solution, dry the surfaces and paint with compound tincture of iodine. This will usually reduce the swelling and tenderness so that when the patient returns in a day or two the work may be completed more satisfactorily. If the tissues are flabby and tend to fall away from the root I use an astringent solution containing zinc chlorid which will pucker up the tissues around the neck of the tooth, and hold the medicament in the pocket.

Occasionally, in acute cases of pyorrhea, we find not only an inflammatory condition of the peridental membrane and of the gums but also an irritation and inflammation of the pulp at the apex which may cause very severe pain. So the devitalization of the pulp is the only thing which will bring relief.

In connection with this drug treatment I instruct the patient how to properly massage the gums after all the concretions have been removed and the surfaces polished. Have them take a mouthful of cold water with perhaps the addition of a little astringent and with the end of the bare finger rub the gums firmly both inside and outside, above and below, at least two or three times a day for two or three weeks. They not only get the benefit of the massage but also the stimulating effect of the cold water. Also have them brush the teeth and gums firmly with a good stiff brush creating quite a little friction and keep on brushing them at least twice a day. And if the patient can, he should give the mouth a thorough rinsing after each meal with water that is 55 or 60 degrees temperature. By this he gets the cleansing and also the tonic effect of the cold water. The teeth were intended to be used and after we have gotten the lameness of the teeth relieved the patient can be encouraged to chew his food more thoroughly, thereby not only giving exercise and strength to these organs but also better preparing the food for assimilation.

And again, the person who thoroughly chews his food is less likely to overeat. It is an undeniable fact that overeating and underexercise is a most potent factor in faulty metabolism by overtaxing the organs intended to care for the food.

I urge them to leave off the more highly nitrogenous foods and substitute more fruits, vegetables, etc., and the habit of drinking quantities of water, breathing deeply and exercising more in the open air. I keep hammering this into their minds all the while I am working on their case.

If there seems to be a cause for this condition other than unhygienic living, then I suggest a careful examination by a competent physician to locate it. I do not believe any man who is not an M. D. has any business diagnosing and treating for systemic origin of conditions known as pyorrhea. The alimentary canal and its appendages are so complex and their functions so varied that the practicing dentist can not have a thorough knowledge of their relations. So I do not hesitate to seek the cooperation of a physician in some of these cases in which local treatment and proper hygiene will not bring results.

To sum it up: I believe that pyorrhea is the biggest problem we have in the whole of dentistry today. There is an unlimited field of work for us in the education of the people along this line and it is our daily duty to spend much time in setting our patients right on this subject.

Upon the thoroughness of instrumentation depends all that follows. If the patient will keep the teeth and gums mechanically clean and free from food debris he will have the best possible condition for their health. That to get results from our treatment we have to take into consideration useless teeth which must be removed. The teeth that are loose must be held in some way. The teeth that are covered with deposits must have these deposits removed. The pouches or pockets must be burnt and coagulated and coaxed and stimulated until we obliterate them as nearly as possible.

And as to medication there is no panacea, no "sure cure" for pyorrhea, but the dentist who ceases to apply remedies and begins to treat the conditions as he meets them is the only one who will effect cures.

And lastly, whenever we put the time and skill upon this class of work that we are accustomed to putting upon constructive work, and whenever we have educated our patients to the importance of such attention, then, and then only, will we be compensated, then and then only will we deserve compensation.

DISCUSSION

Dr. L. A. Salisbury, Crown Point: I have read Dr. Voyles' paper on pyorrhea alveolaris with a great deal of pleasure. It is always interesting to me to read different men's ideas on this subject, partly because it is a rare occasion, indeed, when two or three dentists agree on the etiology, treatment or phraseology of pyorrhea alveolaris. All of us, particularly those who have delved into the mysteries of the pyorrhea quicksands, have different views as to the cause, prognosis and treatment.

For the last several years I have been working along the line of prophylaxis, to a considerable extent, preaching and teaching that cleanliness prevents decay; that clean teeth cannot decay; that to protect the coming generation, as well as to extend the life of the present, prophylaxis or cleanliness must be followed absolutely. I have preached this in the office, out of the office and in the schools, as well as the subject of fresh air, and while the results have been worth the effort, I continue to see mouths that are strangers to the tooth brush and all care, without a sign of caries or inflammation of the gums, and others that are given the best of attention and are as near clean as is possible to keep mouths, appearing every few months exposing areas of decay. There is not any difference in the structure of the teeth, so we are taught. Dr. Voyles says that eminent specialists are unfortunately few and situated hundreds of miles apart. I say, ''thank God there are not more of them and that they are not closer together.'' It is my belief that the average practitioner can do fully as well in the treatment of pyorrhea as the highest priced, self-named specialist. Several years ago the mater of one of our leading families being troubled with a phase of pyorrhea, which she had been told could not be cured, made thirty-eight weekly trips to a specialist's Chicago office for treatment. Being told there that her case could be cured, she aided the dentist to the extent of her ability. The result of these thirty-eight weekly trips and the expenditure of a large sum of money was worthless. She lost from three to six teeth a year. This is only one of a number of instances of a like nature that I recall. The essayist states ''that do we not see people of all classes dropping their teeth out one by one, and because, in most cases, they do not know any better than to lose them?'' I must take exception to this stand, as a result of over eleven years' practice in the treatment of pyorrhea alveolaris, and of examining cases treated by so-called specialists and other dentists. My best judgment tells me pyorrhea alveolaris is in a great majority of cases incurable at the present time. Do not misunderstand me; a simple stomatitis which would in time lead to pyorrhea can be cured. I refer to well established cases of pyorrhea alveolaris with pus present, and more or less tissue destroyed, and will state again that the majority of such cases cannot be cured. Relief can be given, but that is all. Do not misunderstand me; some bad cases can be cured or rather practically cured, for in all cases of pyorrhea alveolaris the teeth need going over twice a year at least. Every dentist should give his skill and ability to treatment of this disease, doing what he can to relieve and repair and particularly removing and keeping away all calculus when it first appears; this is, in my judgment, the basis of the whole matter. See your patients, particularly the children, every six months, educate them in the proper method of using the tooth brush and floss, (going into the schools if necessary to do so) teaching them to keep the teeth polished and gums firm and healthy. Keep everlastingly at it and in a few years your cases of pyorrhea will have about disappeared. This is the best and surest way to cure pyorrhea alveolaris. As to the treatment of this trouble Dr. Voyles' methods are correct and will do in the hands of conscientious dentists, all that can be done with the malady.

Dr. W. C. Hessler, Crawfordsville: It is a pleasure to discuss such an excellent paper as this produced by Dr. Voyles, because it is a recital of that which comes under our daily labors and within the knowledge of the average and ordinary practicing dentist.

Progress is largely due to scientific discovery but I believe the stability of advancement and progress is due to the correction and rectification of error. It is your duty and mine to prove the truth or fallacy of statements and methods of those who appear before us in the capacity of instructors.

Dr. Voyles has wisely remarked, ''Where the elements of these deposits come from I do not know. Where they come from and why they are thrown down I leave to the investigation of those of a more scientific turn of mind.''

You will pardon me if I digress from the discussion of the merits of the paper, but what I am about to say will be said with the intention of shedding more light on a subject surrounded with more or less gloom.

In a conversation with Dr. Cravens several years ago he told me about the preparation of a paper on salivary calculus. He said he got into deep water before it was completed. He found a close analogy between salivary calculus and renal calculi, biliary calculi, arthritis caused by calculi in and about the joints, and last but not least, arteric schlerosis. All this may sound hopeless but Dr. Voyles has given the command to advance. He has pointed out our weaknesses and also the perverseness of the public. The public can be educated. In regard to instruments and instrumentation the essayist covers this fully. It may be said, however, each operator should use such instruments with which he is most deft and skillful. In my hands the pull-cut instrument is not a success when used in deep, narrow pockets. This does not include the small flat files such as the little gold finishing files.

The medication as outlined by the paper is excellently described with its aseptic precaution and antiseptic treatment; the astringent remedies and the escharotics to remove gangrenous gum tissue: We have recently been advised by an eminent dentist to use a concentrated solution of zinc chloride in the pockets; i. e.: to allow the zinc chlorid crystals to deliquesce in an open bottle.

Dr. George Cook, of Chicago, advises the use of 10% solution of potassium iodide instead of the powerful astringents. Time will tell us the efficacy of these various remedies and methods.

It will be found advantageous to give these patients as much instruction as possible regarding the outcome of these conditions which Dr. Voyles has described so completely. Instruct them about the great benefit to be derived from prevention and prophylaxis. It is much easier to prevent the establishment of pyorrhea than to cure it.

Every dentist can do as much as some of us have done. You can promise to postpone the evil day when the natural teeth will have to be condemmed to the forceps.

I find it difficult to get patients to submit to careful dietetic regime; nevertheless I advise them about the character of food which would be most advisable for them.

Again you will pardon me if I should display some of the "ego." I advise my patients to drink distilled water or carefully filtered rain water. In the town in which I live the water is heavily impregnated with inorganic salts and I believe quantities of these salts are carried through the blood and are discharged through the excretory glands. Some of these salts are carried out through the salivary and the mucous glands in the oral cavity.

In conclusion, let me say there is no royal road to the successful treatment of pyorrhea. You must pay the price in honest effort.

Let me add that, in devitalizing teeth to save them in case of loosening from pyorrhea, I find the arsenical paste gives better results than immediate extirpation of the pulp by pressure anesthesia. This is an empirical and clinical observation.

Dr. B. B. White, Terre Haute, Ind.: I have wondered why somebody didn't mention Dr. Head's remedy, ammonium bifluoride. It dissolves solids very nicely where you would otherwise have to use instruments. I do not know that it affects the tissues in any detrimental way; and it certainly makes it very much easier.

Dr. W. H. Green, Lebanon, Ind.: I do not believe that the medical treatment is of so very much importance in a case of pyorrhea. The *main* and *essential* thing is to remove all deposits and scrape or plane all the pitted surfaces smooth, and you have the case cured without any medicine. Wash out with some dioxygen and follow with some antiseptic to wash out all loosened particles which will hasten the results in soon healing up the pockets. I find many cases where there is absolutely nothing to do but extraction. You can tell all these cases when you examine such patients. Dr. N. S. Hoff, of Ann Arbor, Mich., in his clinic at the Indiana semi-centennial jubilee, 1908, said, "Clean off the roots and you have the disease cured." If you have a splinter in your finger and pus forms, as soon as you remove the splinter, the cause, it will heal. Remove the cause in pyorrhea and the cure will follow.

Dr. L. H. Wirt, Muncie, Ind.: I have used ammonium bifluoride to a small extent and I believe it is a very good thing, but I have found some cases in which I could not get it to penetrate some of the deposits. The method that I use in administering this is by the use of a little glass syringe, and I find that I can get into places by the use of this syringe better than I could otherwise. As to the use of astringents on the gums, it seems to me that that is not always practical. By starting the circulation I can get about the same results as you get by the use of an astringent. As to cooperation in helping to improve these cases, I believe that is a good plan. I am very fortunately situated in being connected with some surgeons at a hospital who are up-to-date enough to recognize the necessity of the treatment along with their patients that have cases of general debility, etc. I have convinced them that I can help them in their work by putting the mouth in a healthy condition. I have demonstrated it to them and they now see it, and they also largely suggest to their patients treatment of mouth conditions before operating. I think they can be educated along that line a great deal in other places. Some doctors are a little slow to catch on, but I think we can get their help. We can be a help to them and they to us.

Dr. Voyles, (Closing the discussion): I will add nothing further except to say that I am grateful for the kindly manner in which the association has received the paper, and would not have been disappointed had there been more adverse criticism.

I wish, however, to correct a typographical error in the discussion of Dr. Salisbury in which he quotes me as saying we do not see all classes afflicted with pyorrhea. It was my purpose to emphasize the universal prevalence of this condition and to decry the general apathy of the profession to its treatment. Any dentist who can insert a good gold filling can treat with success most cases of pyorrhea and he should do so.

SOME PRINCIPLES OF RETENTION IN ORTHODONTIA

By Martin Dewey, M. D., D. D. S., Kansas City, Mo.

ACTIVE RECIPROCAL INTERMAXILLARY RETENTION

I have described various forms of intermaxillary retention, which were made to conform to one of the requirements which was thought necessary in times past: viz, that teeth, to be retained, must be held rigid. I tried to show the various advantages and disadvantages as they appealed to me. In all of these forms, the great disadvantage was the fact that the teeth were held rigid. Now, we come to the consideration of the active force as used in intermaxillary retention and the advantages which it possesses over the passive forces.

The effect of use upon the teeth as a factor in the evolution of the teeth and jaw forms, is well understood by all who have devoted any time to the study of comparative anatomy. Wherever the teeth have been used for a definite purpose, it has been found that a certain change has been produced. This change has been the result of use. Therefore, it is but reasonable to expect that the normal development of the structures which support the teeth would also depend upon and respond to the use of the teeth. Then in order that we may have the proper development of these parts we must so construct the retainers as to allow the teeth and the supporting structures to perform the functions intended for them to perform. The retainer must be so made and placed that all of the normal forces of mastication will play their intended role in development. After we have done this, would it not be better to make use of what artificial forces we can to assist the natural forces in the development of the parts?

It has long been known and shown by Dr. Noyes that bone develops as the result of mechanical stimulation, whether this stimuli be the result of natural or mechanical means, makes little difference. The success in the retention of teeth which have been moved from positions of malocclusion, depends on the proper development of the bone supporting them as a result of the proper functions of the peridental membrane. The first factors, as we all know, which causes the proper development of the parts is proper use and this use must not be interfered with by an improperly constructed appliance. If the stimulating influence of use can be supplemented by a stimulating force from the appliance, we would expect to obtain a much better result than we would obtain if we depended on the natural forces alone, even overlooking the fact that these natural forces are very often interfered with in the use of improper retainers. Taking the above facts into consideration, it is possible to assist and stimulate the more rapid growth of the parts supporting the teeth by the use of an active force in retention. If it were possible to get the patient to properly use the teeth a much greater portion of the time than it is, we would find the teeth would sooner become "fixed" to place. When we consider that a large majority of the patients do not even properly use the teeth during the time they are supposed to be masticating the food, we are confronted with the fact that teeth are often never properly used. Active force of retention which supplies this lack of use then becomes a greater advantage than at first glance it appeared to be.

It has long been known that in the retention of Class II. and III. cases, there was a great tendency for the teeth which carried the band and spurs to tip. This was especially true with the molars, unless some form of stationary retention was used, and if it was used it possessed one great advantage, viz. it interfered with the proper use of the teeth, or more correctly, it prevented the teeth and supporting parts from receiving the proper forces of occlusion because said forces were expended in the retaining appliance. It must be admitted that we would obtain a great advantage in the retention of cases if it were possible to use some force which would overcome the tipping of the teeth upon which the retainers were placed, and at the same time permit of the distribution of the forces of occlusion to the parts. This is just what active intermaxillary retention does.

The advantages of active intermaxillary retention are that it resists the backward tendency of the teeth, supplies a force which counteracts the tipping of the teeth which were tipped by the plane and spur retainer. (Fig. 1.) Also, that it permits the teeth to respond to the forces of mastication and that these forces are supplemented and the parts stimulated by the constant application of the force.

As I have said before, the application of the active intermaxillary retention is particularly applicable to Classes II. and III. cases. It was used by me first in 1905, after having tried all other plans then in use, including the stationary intermaxillary appliance described in my last article. It was impressed upon me by the ease with which Class II. cases could be retained by light rubber ligatures when the regulating appliances were on. Also, in trying to analyze what took place when the molars tipped and settled, I decided to use the same force in retention that was used in regulating. (See article by Dr. Watson, read before the American Society of Orthodontists, 1908.) To impress upon you the condition which we have to contend with in typical Class II., Div. 1 cases, I will call your attention to some of the features which have been extremely troublesome in times past. To begin with, you have a case in which the muscles of expression and mastication have long been working in an abnormal manner. The result of this is the improper development, not only of the muscle, but as the result of the abnormal stimuli, the bones have developed abnormally or have not developed at all. As a result of the malocclusion of the teeth, plus the improper use of them, the molars have not developed as much as they should, or the lower anterior teeth and possibly the upper anterior teeth have erupted too far. Owing to the fact of it being almost impossible to obtain a fixed point to measure from, we are not certain just what does take place. However, whatever occurs, to obtain the best results we must treat the case as if the lower molars were in infraocclusion and the anterior teeth in supraocclusion. It is well known that the mesiodistal relation of the teeth must be established and the proper width of the arch brought about. This latter has been easy, but to hold it there and at the same time overcome the first mentioned troubles has been a different proposition. However, in my hands, I have had little trouble in maintaining the proper length of the molars and getting the proper establishment of the functions of the muscles.

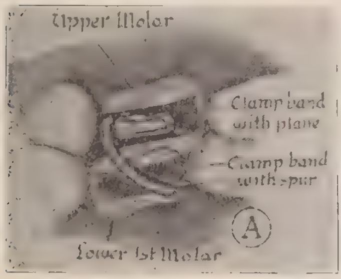


Fig 1A shows how the force of passive retention in Class II tends to tip upper and lower molar.

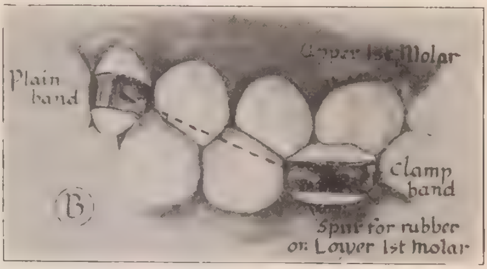


Fig. 1B shows how the pull of the rubber ligature from canine to lower molar supports the mesial portion of the lower molar, preventing tipping. Dotted line represents rubber.

After we have properly treated the case with the intermaxillary anchorage and expansion arches, it would be very easy to retain the case if we could get the patient to continue to wear the regulating appliances as a retaining appliance. As we wish to remove as much of the bulk as possible, it has been the custom to retain the case by some other means. Using a plain line of reasoning, we should arrive at the conclusion that if certain forces were able to move the teeth into normal occlusion by overcoming the forces of malocclusion, similar forces to those used in regulation would be the most successful in retention; therefore, the solution is the use of intermaxillary force of an active nature in retention. Having decided upon this, the next question is to eliminate as much apparatus as possible and at the same time be able to maintain all movements and use active intermaxillary retention.

THE RETAINING APPARATUS

Our attention is directed first to the retention of the superior anterior teeth. The arch having been widened in the region of the canines, and the anterior teeth moved distally, it means that we must, for a time, retain them in that position. In order to do that we utilize the compound reciprocal principle by placing bands on the canines, the bands being soldered on the labial side near the buccal ridge of the tooth. The object of the importance of the location of the seam is, first, to avoid having anything but the thickness of the band on the lingual side of the tooth so as not to prevent the proper contact with the lower teeth. Second, by placing the seam in the center of the crown of the tooth, we have ample room to make a solder attachment mesial and distal to the seam (Fig. 2). The material from which the bands for the canines are made can be left to the individual. In some mouths German silver will be the better, in others some of the noble metals may be used. After the band is soldered a piece of small iridio-platinum is soldered to the anterior buccal surface of the band with the view of having it pass around the labial surface of the anterior teeth. The object of using iridio-platinum is because of its being stiffer than the other metals which I have tried. However, the teeth will have to be watched to a greater extent than if a German silver wire were used, for teeth will decay more readily when in contact with iridio-platinum than when in contact with German silver, regardless of the pseudo-scientific statements to the contrary.

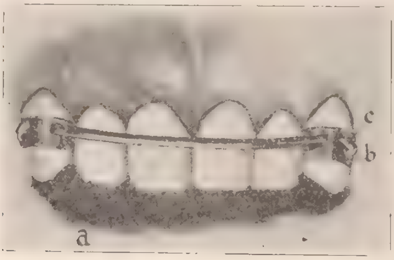


Fig. 2—Front view of upper anterior teeth showing appliance use to retain Class II Div. 1 by the use of active intermaxillary retention. (*a*) Wire holding incisors from moving forward and maintaining expansion of canines. (*b*) Bands on canines. (*c*) Sprue for attachment of rubber ligatures.

This wire passing from one canine band to the other, if sufficiently stiff, retains the buccal expansion of the canines and prevents the backward movement of the anterior teeth. So you have six teeth retained by the reciprocal force of one appliance, therefore, the principle is one of compound reciprocal retention. If the case is one in which the anterior teeth have been rotated, they can be prevented from returning to their old position by placing a wire from one canine band to the other on the lingual side. The advantage of the wire on the labial and lingual side, to retain teeth which have been in torsal occlusion, over bands and spurs placed on the teeth, is that the teeth are permitted to assume the proper interproximal contact, thereby becoming wedged in the arch and each one supporting the other, such a thing being impossible when bands are on the teeth.

On the distal buccal corner of the canine band is soldered a small spur, projecting upward and forward from the point of solder attachment. This spur is for the holding of a light rubber ligature which will supply the active intermaxillary force of retention. The expansion of the molars and premolars can be obtained by any of the several methods used in time past, providing whatever form is used, that it be so made as not to interfere with the natural forces of retention.

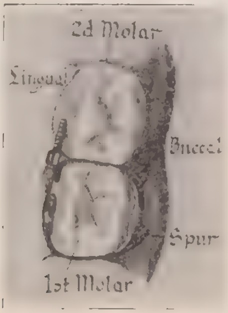


Fig. 3—Occlusal view of first and second molars, showing the screw on clamp band turned distally to engage the second molar, which prevents the distal surface of the lower first molar from being pulled buccally.

The lower teeth are retained by the use of the compound reciprocal principle, remembering to so construct the appliance as to antagonize the backward tendency of the teeth only, and permit the forces of natural retention to perform their function. The only point that needs special description is that part which applies directly to the active intermaxillary retention. The tube is removed from the D band and a small spur soldered to the mesial buccal corner of the band. This spur projects downward and backward from the point of solder attachment. It is well here to speak a few words in regard to this attachment on the molar which is to be one of the points of anchorage for the intermaxillary force of retention. The pull of the rubber ligature will be forward and upward. As the premolars are anterior to the molar, there will be no danger of displacing the molar forward, but as the pull of the rubber band is from the buccal side of the tooth there will be a tendency to displace the molar buccally. Therefore, the spur must be placed as far toward the mesial surface of the tooth as is possible, which will bring the pull of the rubber more in line with the line of occlusion and have a tendency to pull the molar up against the premolar in such a manner as to prevent the rotation of the molar outward. That is all the precaution I have to take to avoid the outward displacement of the molar in Class II. cases. Those who have had little experience can avoid all danger to the molar rotation by soldering a spur on the distal lingual corner of the band and allow it to engage the mesio-lingual corner of the second molar, or by permitting the screw to point distally and engage the second molar as shown in Fig. 3.

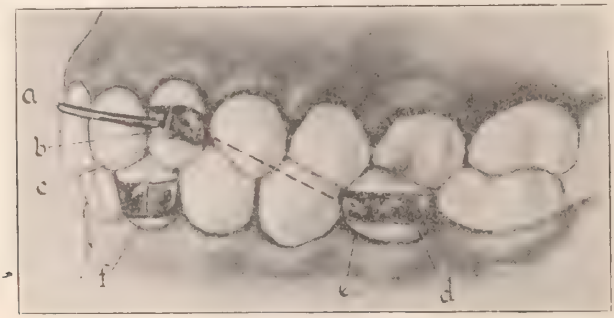


Fig. 4—Showing buccal view of Class II Div. 1 case retained by active intermaxillary retention. (*a*) Wire on superior anterior teeth. (*b*) Band on sup. canine. (*c*) Sprue for rubber band. (*d*) Clamp band on lower first molar. (*e*) Sprue for attachment of rubber band. Dotted line from *c* to *e* represents rubber band.

One of the things which we have contended with in time past, in the retention of Class II. cases, is the tendency of the lower molar to tip forward instead of standing upright as it should. This tipping has been augmented by the forms of retention used in a great many cases. It had long appeared to me that the ideal thing to do would be to lift the mesial corner of the tooth up. This procedure would give the molar a better position and at the same time lengthen the molars. In the intermaxillary retention we are able to do this very thing by placing the spur on the lower molar band at the mesio buccal corner. The rubber, passing from the superior canine, will exert an upward pull on the mesial side of the molar in such a manner as to elevate that portion of the tooth. This feature in itself would be enough to recommend this form of retention. (Figs. 1 and 4.)

I have mentioned the fact that the lower molars are elongated by the pull of the rubber ligature. Some may at first glance think that the canine would be elongated as much or more than the molar, but you must remember that the superior canine is in occlusion with the lower canine and premolar, which, if the lower molar occludes at all, will be the distal cusps. This, then, allows for the tipping and elongation of the molar which I have spoken about.

In the retention of Class III. cases, the same plan is followed except to reverse the attachments for the rubbers from the upper to the lower teeth. Place the canine attachment on the lower canines and the molar attachment on the upper teeth. It is desirable and wise in most cases of Class III, to place a spur on the upper molars that projects downward, the lower end of which is formed into a hook, to hold the rubber. This spur should be made long enough so the pull of the rubber will be directly backward from the lower canine unless it is a case where the lower canine is to be elongated; if elongation is desired, the spur on the molar should be short as in the Class II. case.

Those who have not used active intermaxillary retention and have found trouble with the passive forms, have a delight in store for themselves. The rapidity with which the case rounds out to completion is unequaled by anything except the ease with which normal occlusion of the teeth is obtained by the use of intermaxillary force in treatment.

In these articles I have tried to confine myself to general principles and to impress upon the mind of the reader that there were principles in retention and by the use of these principles a retainer could be made which would produce a certain result with a great degree of positiveness. That the great demand in retention is a retainer which will antagonize the backward tendency of the teeth only and not interfere with the natural forces of retention which are the real factors in the final success of the treatment of malocclusion. It is also necessary that you understand the natural and mechanical forces with which you have to deal, the structure of the parts involved and that you have some idea of what you are going to do before you do it. If you have all this in mind you will adopt some plan and follow some principle of retention.

(*To be Continued.*)

SOMETHING ABOUT NON-COHESIVE GOLD AND WHERE AND HOW TO USE IT*

By H. B. Tileston, D. D. S., Louisville, Ky.

DOUBTLESS you have all seen the juggler comedian, who, while skilfully keeping in the air a table, a lighted lamp and an open umbrella, gives voice to certain questions which naturally arise in the minds of his audience. As I announce the subject of my paper I imagine I can read in the minds of my hearers some such expressions as these: "What! that old chestnut again!" "Wonder if he knows that the practice of filling teeth with gold foil is obsolete?" "Doesn't he know that inlays, porcelain and gold, and silicate cements have banished gold foil from up-to-date dental offices?" "Why didn't somebody 'put him wise?'"

Yes, I know all about these things; at least I come about as near knowing how true they are as anybody else does. We have been going at a terrific pace in the last few years, and one must be always on the alert if one expects to come in touch with all the new things in dentistry as they swiftly come—and go. What is considered good practice today will be out of date tomorrow. An innovation in dental practice is like what someone has said of the automobile, "There it comes, here it is, there it goes."

---

*Read before the Indiana State Dental Association at Indianapolis, June 29, 1909.

Strenuous efforts have been made to find a material, a mode, or a method that would eliminate the use of gold foil from operative practice, and they have almost succeeded—but not quite.

Whoever would practice dentistry in this twentieth century, with the lofty purpose of giving his patrons the best possible service, must be a man of judgment. From many materials and myriads of methods he may pick and choose, selecting this or that, the new or the old, his choice being determined only after the most careful study of the needs of each particular case. He cannot afford to be a faddist. Decidedly he should be an eclectic.

In the exercise of such selective judgment the dentist will find, in the course of a varied practice, ample opportunity to employ all the new things that have been put forth in recent years, and he will also find, unless he is possessed by a fad or influenced by prejudice, many cases still in which gold foil may be used to best advantage, and many also, in which foil of the non-cohesive variety will give the most satisfactory results.

Not within the memory of very many of this audience, though possibly of some, and yet not so very many years ago, the only kind of gold the dentist had for filling teeth was non-cohesive foil.

Either the early manufacturers of gold foil failed to purify the metal sufficiently to develop its natural cohesive property, or because of carelessness in handling, the foil reached the dentist with its surfaces so unclean that one piece would not stick or weld to another; for which reasons, and until better methods were learned, cohesive foil was not known.

As a consequence early operators were compelled to introduce foil fillings upon the principle of incorporation and wedging of the mass, the gold being retained in the cavity much as a cork is retained in the neck of a bottle. There is enough elasticity in gold to hold it in place when compressed within a cavity in a tooth, itself somewhat elastic, even without undercuts.

As a further consequence cavities had to be so prepared as to permit of their being filled by this only available method, which frequently resulted in such gross mutilation of teeth as to make them totally unfit for the function of mastication. This was notably the case with the molars and bicuspids, which were ruthlessly filed away to gain free access to cavities in their proximate surfaces, which were then stopped, or I might say "stoppered," with flat fillings, leaving V-shaped spaces opening wide towards the occlusal, into which food would pack in the effort at mastication, resulting in absorption of the gum septum and great discomfort to the individual.

In the effort to remedy these mistakes the cohesive foil workers, in later years, labored for hours building out great contours to restore contact points; which, still later, was more expeditiously accomplished with the gold inlay.

Forced to employ non-cohesive foil or none at all, dentists in those days developed a skill in its use that was truly marvelous. Many of us have seen fillings made by some of these old school operators, placed in positions difficult of access, which, after many years, were preserving the tooth structure perfectly, the surface of the filling having much the appearance of cast gold, so dense and uniform as to be without speck or flaw.

In its highest perfection the use of non-cohesive gold is a lost art.

And it is an art that will never be revived; for many things that were indifferently well done with this material or were wholly impossible, are now better done or accomplished with ease, by modern materials and methods.

And yet, non-cohesive gold has certain inherent properties which adapt it to uses which are not to be despised even by the most up-to-date operators, and of some of these I wish to speak.

First a word as to the material itself.

Non-cohesive gold is not necessarily any less pure than the cohesive variety, except as to its surface, upon which has been deposited some foreign matter, usually, though not always, some volatile gas such as ammonia, which destroys its tendency to cohere.

Manufacturers frequently label such gold as "soft," but it is not really any softer, *per se*, than cohesive gold. Because of the deposit upon its surface with the consequent loss of a tendency to stick together, pieces or folds glide smoothly and easily upon each other, and it feels soft and plastic under the instrument. It is to this property that non-cohesive gold owes its chief value in filling such cavities or parts of cavities as are best adapted to its employment, and the more perfectly all cohesive tendency is overcome, the better the foil is for the purpose.

Abbey's foil was used by our forbears, and after more than eighty years' continuous production by the same firm, it still holds first place as the most absolutely non-cohesive gold foil.

So-called "soft" foils that may readily be made cohesive by annealing, are apt to get their protecting film rubbed off in preparation of the foil or in instrumentation in packing into cavities, and become semi-cohesive, which condition interferes materially with the proper use of the material, making it harsh and intractable under the instrument.

The localities where excellent results are obtained by the use of non-cohesive foil are as follows:

First: All occlusal or other pit cavities, which in most cases should be filled entirely with non-cohesive foil.

Second: Labio and bucco-gingival cavities, which should be filled wholly or in part with non-cohesive foil according to the conditions presenting.

Third: The gingival third of all approximal cavities, except in cases of large contour restorations in incisors, when it may be deemed best to start from the gingival and complete the filling throughout with cohesive gold.

Fourth: Against the labial enamel plate in incisors when that wall has been preserved for aesthetic reasons.

Fifth: To correct any little points of faulty adaptation while packing cohesive foil.

For filling simple occlusal or pit cavities the foil is prepared in ribbons and cylinders. A sheet of No. 4 Abbey's foil is cut into thirds, and these pieces folded into ribbons a little wider than the depth of the cavity to be filled.

Some of these ribbons are rolled into cylinders varying in diameter according to the size of the cavity, and the place in the cavity each is to occupy.

For folding the ribbons a steel, ivory or bone spatula is used, the folding being done on a chamois pad, or a small board covered with several thicknesses of velvet. The cylinders are rolled upon a tiny-pointed, three-sided instrument like a Swiss broach, the end of the ribbon being engaged upon the point by pressing upon it with the tip of the finger while the instrument is given a turn or two, after which the ribbon is held between the thumb and index finger; when a cylinder has reached the desired size the ribbon is cut off with the shears, and the ends of the cylinder very slightly compressed with the foil carriers to keep it from unrolling. This work should be done with precision, as the more neatly the ribbons and cylinders are made the more satisfactorily they can be used.

Cylinders made in this way are much better for the purpose than those ready made, for they contain more gold than the latter and consequently fill more rapidly and can be made to exactly suit the case in hand.

The instruments used are flat wedge-shaped points with saw tooth serrations, and several grooves running a short distance up the sides of the blade to aid in catching the ribbon folds. Some of these blades are hatchet-like and some hoe-like in form, and vary in angle from 12 to 24 centigrades, and also vary in size, and should have large wood or ivory handles. Such instruments cannot be bought in the shops nowadays, for they are no longer made. One must either fall heir to them from some of the old school operators, make them himself, or have them made from accurate patterns furnished to the instrument maker, and then they are apt to be unsatisfactory, for their making is another lost art.

There is a set of sharp-pointed instruments, rights and lefts mostly, which are very useful and are to be had in the market, but the handles are too light.

In filling a simple cavity such as we are now considering, say in the occlusal surface of a lower molar, a cylinder of the proper size is grasped with a pair of stiff, strong foil carriers, and placed in the distal part of the cavity with one end resting upon the cavity floor and the circumference lying smoothly against the wall. With the carriers this cylinder is compressed slightly to one side and another cylinder is placed beside it and compressed the opposite way. A third cylinder is forced in between the first two and with a wedge-shaped plugger forced back against the distal wall, the three being thus keyed tightly in place. This procedure is repeated in the other angles of the cavity until the walls are completely lined with cylinders which have been compressed more or less against the walls, but none of which have been condensed in the direction of their long axis. A ribbon is now grasped in the carriers and one end thrust between the upright cylinders to the floor of the cavity and with a wedge-shaped plugger is carried in, fold after fold and ribbon after ribbon, using a rocking leverage motion, forcing all the cylinders in every direction tight to the walls until every possible crevice is packed full. The plugger is now placed on the ends of the cylinders protruding above the cavity walls and these are packed down with great force until every part of the filling is as dense as it can be made. If the plugger finds a yielding place anywhere, the point is forced deep into it and another piece of ribbon packed into the hole thus made.

The filling may now be malleted if desired, but if the work has been properly done, malleting will be unnecessary. The surface of the filling is now burnished hard, directing the burnishing towards the margins. With stones of suitable size and shape, the excess is ground down and the surface reburnished, and you have a filling that is as perfect as a filling can be made, and completed in less time than any other operation with gold could be done. The use of the rubber dam is not required, as the field can be kept dry for the brief time necessary, with cotton rolls and clamp.

In very large fillings exposing a broad surface to mastication, the center may be filled with DeTrey's or other crystal gold, instead of ribbons, thus making a harder surface.

At this point I will pause in my reading to give a demonstration on this large model, of the procedures I have just been describing.

Labio and bucco-gingival cavities may be filled entirely with non-cohesive gold when they are small and the surfaces upon which they occur are flat, as in the case of upper central incisors and molars, where they do not extend mesio-distally, into the embrasures. The labial and buccal aspects of laterals, cuspids and bicuspids are too strongly convexed to permit of the wedging principle being successfully carried out. These are best filled by lining the walls with non-cohesive and finishing in the center with cohesive crystal gold, making the surface as dense and smooth as possible. In these cases the rubber dam and cervical clamp should be used.

The gingival third of complex cavities in the mesial and distal surfaces of molars and bicuspids can be more perfectly filled with non-cohesive cylinders than is possible with cohesive gold. These localities are so difficult of access and the line of approach in instrumentation so disadvantageous, that it is with the greatest difficulty that cohesive gold can be accurately adapted to the walls and margins, while with non-cohesive cylinders the task is comparatively easy. For this purpose, cylinders are prepared whose length is about one-third greater than the depth of the cavity from the axial wall to the cavo-surface angle at the gingival, and of a diameter to suit the case in hand. One of these is grasped with the foil carriers and carefully placed in the bucco-gingival angle, with its circumference lying smoothly against the buccal wall and resting upon that portion of the gingival wall, the end protruding into the interproximate space, in which position it is gently forced snugly against the walls, mostly towards the buccal, with the side of a flat plugger. Another cylinder is in like manner placed in the linguo-gingival angle, and a third is forced between these two like a wedge, directly towards the gingival wall. If the size of the cylinders has been correctly judged, their combined mass will be self-retained, while into the concavity between the lateral cylinders DeTrey, or other crystal gold, or cohesive cylinders, is packed and malleted, thus condensing the soft cylinders tightly against the walls and keying them securely in place. When enough cohesive gold has been packed to secure the filling from possible displacement, and not before then, the protruding ends of the soft cylinders are to be condensed towards the axial wall and over the margins with foot pluggers and flat burnishers. It is a good idea at this time to finish the gingival portion of the filling with strips and polish it, after which the contour and contact point are completed with cohesive gold.

It is important that cylinders for this method should be of absolutely non-cohesive gold. If there is the least tendency in the gold to stick, the middle cylinder will stop short of the gingival wall, leaving a fault there that would probably escape notice, and would also have a tendency to drag the lateral cylinders away from the walls instead of wedging them tightly to them, as intended.

(*To be Continued.*)

ORAL PROPHYLAXIS AND THE DENTAL PROFESSION*

By Mabel M. Bennett, D. D. S., Detroit, Mich.

TO a person devoting his time exclusively to the work of oral prophylaxis, like any one who specializes along a certain line, its benefit is so evident that it seems incredible that any one, especially a *dental* practitioner, should question its merits. In nearly all our dental magazines articles written by enthusiasts of the work appear now with more or less regularity. In some of these is described in detail the full method of treatment. There are the clinics of the different dental societies at which are exhibited patients showing the result of treatment, and yet it is incomprehensible that so few advocate it in their practices or are really aware of the necessity of painstaking care and thoroughness of instrumentation to secure successful results. Most dentists do not seem to set the proper value upon this work until they do it themselves and see the result of their own efforts.

---

*Read before the Michigan State Dental Society, June, 1909.

This paper, then, partakes of the nature of a plea to the dental profession for oral prophylaxis. The members of the profession themselves need it. All humanity needs it.

The question by which we are immediately confronted is, how is this herculean task of revolutionizing the unsanitary and infectious condition of the human mouth to be best propagated? I think it is evident to all that it is a campaign of education for clean mouths and clean teeth, and is one in which the concerted effort of the members of the profession is required. Dentistry alone has the power to relieve humanity from the plague of mouth infection. It is *clear,* that the burden of the responsibility rests with the dentist, for it is to *him* that a person *first* applies for relief from trouble arising in the dental structures. It remains for the dentist to *create* an enthusiasm and appreciation for this branch of dentistry.

The dentist himself *must have* a thorough knowledge of prophylaxis both from personal experience in the hands of a competent operator and from the careful and regular observation of patients under his care in order to form an adequate appreciation for its value. He cannot estimate its *true* value in one week or even six months. He needs to give it a thorough test of at least one year before he can form an adequate estimate of its true merit. It is not only necessary for him to be painstaking in his own efforts but he must advise patients to be painstaking in the personal care of their mouths, to observe and tactfully suggest from time to time as they come under his observation that more careful attention is necessary in *certain* places. Cases are rare which do not offer *some* problem for solution in the matter of personal care. It is not sufficient simply to *tell* a patient to brush certain places more carefully, but inflamed areas must be *pointed out* by means of mouth- and hand-mirror, and the patient given a reason *why* this special effort is necessary. Explain to him that it requires only a few days' neglect in many instances to set up an inflammation of the tissue. Impress patients with the fact that to keep the tissues of the mouth healthy they must be kept absolutely free from local irritation. Every source of irritation must be removed, and frequent treatments by the dentist and the regular care by the patient must be consistently carried out. If a patient takes sufficient interest in his mouth to come to you for treatment the mind of that individual is most certainly open to conviction for a betterment of his condition and a means whereby it may be attained. It is, then, not only the dentist's *opportunity* but a *duty* he owes all such patients as well as himself to give them the benefit derived from experience.

Although much has been written on the subject of oral prophylaxis I regret that the profession in general is not convinced of its intrinsic value and the means of its accomplishment. For an operator to place a neglected or diseased mouth in a normal, healthy and hygienic condition he must have a conscious realization of the ideal condition toward which he is working and be dissatisfied with the attainment of anything short of that ideal. The value of knowing the ideal and the attaining of this must not be underestimated.

The mechanical side of dentistry has never been neglected in practice or print and there are no fears that it ever will be. But it is hoped that there may be created a greater enthusiasm for the esthetic side (if I may be allowed to so call it). The need for it is great. It is shameful in these times how little understanding even dentists themselves have of this work. Only a short time ago a dentist came under my care who had practiced dentistry for nineteen years and always had a lucrative practice. His was only an average case. I worked on him one hour and a half and did not finish the lowers. I told him that I could not finish at that sitting, whereupon he remarked: "Is that so? I thought it would take only about a half hour." Now if the dentist himself does not recognize and realize the seriousness of his own condition, what must be the condition of those in whom he has less interest who come under his personal care. Is the time not ripe when the laity should revolt at the shocking neglect on the part of the profession in whose care they innocently or ignorantly place themselves for what they suppose to be first-class services? In many cases this has been true. I have seen many patients enraged at their dentist for allowing their teeth to be ravaged by pyorrhea with no warning or well directed effort to correct the disease. I have in mind a patient who had lost all but twelve of her teeth when she was placed under treatment three years ago. Since then she has lost none and I would defy anyone to find a more healthy or hygienic mouth. She feels the deepest gratitude for prophylaxis and never fails to say every time she has treatment that it is the greatest thing ever discovered for humanity. (I also think her former dentist would not enjoy being around when she tells about how all the others loosened and came out.) Of course five or six years ago there was an excuse for the dentist, but today there is none. It has been proven beyond the question of a doubt that pyorrhea is a condition which is wholly preventable as well as curable. And it is possible for any dentist to prevent pyorrhea even though he may not be able to cure it.

The consensus of opinion is that there are no constitutional factors entering into the development of pyorrhea therefore there can be no constitutional remedy for it. If this be true, relief, cure and prevention must come from a local source and that alone.

Time will not permit me to go into the technique of the treatment except to say that thoroughness of instrumentation and scrupulous care on the part of the patient are the keys to the successful attainment of results. There is nothing more important before the dental profession today than the prevention of disease in the mouth and the reduction of caries to a minimum by regular monthly treatment. It is of no less practical importance to the profession than to the laity. All need it.

It remains the duty of the dental profession to so elevate prophylaxis that an enthusiasm may be created in the profession at large, thereby arousing the public and the medical profession to the importance of the restoration and maintenance of perfect sanitation for the oral cavity. Physicians and nurses should recognize disease of the soft tissues of the mouth in its incipiency.

I do not believe that it would be possible to estimate the value of oral prophylaxis in promoting healthy conditions in cases of tuberculosis. It is the privilege of dentistry to lend a helping hand in preventing the spread of this infectious disease which is ravaging the very bulwarks of our nation. It is an opportunity for the dental profession to gain recognition from our sister profession by taking an important step in a scientific direction.

We hear and read of the untiring efforts of the Anti-Tuberculosis Society to which many of us a few days ago graciously contributed. This society advocates more fresh air, improved sanitary conditions, more nutritious food, all of which every one of us sincerely approve and would gladly assist in this movement for the prevention and cure of that disease. But let me ask you if you do not think this nutritious food would not better nourish a diseased and impoverished body if taken through a sanitary mouth than one reeking with filth and disease? No doubt in many cases of tuberculosis millions of the very germs and their toxic products which are the cause of the trouble are daily swallowed with this nutritious food. It seems to me that a very important and fundamental factor in general hygiene is being overlooked and one to which the attention of physicians and nurses should be called. They should recognize in its incipiency a diseased oral condition, for it is they who first come in contact with these cases. It would seem that in combatting disease it would be a part of wisdom to start at the fountain head. It becomes more and more evident that oral prophylaxis is a campaign of education, and that by a more universal knowledge of oral hygiene and the method of attaining it, can health be secured. Many excellent articles which are written on this subject never go to press and consequently never reach the public.

It is impossible in the short time allotted for this paper to go deeply into the moral effect which prophylaxis has on the dentist. He cannot earnestly and conscientiously practice oral prophylaxis for any length of time without becoming a better operator. Experience and observation will teach him that faulty operations are the source of much inflammation, and if he is a man with the right kind of aspirations and ambitions, every subsequent operation will be done with greater care and consideration for the soft tissues of the mouth. Not only does it improve his mechanical ability, but it improves and strengthens his personality, which with his improved mechanical skill, convinces and holds a better class of patients, thereby helping him in a financial way.

In conclusion let me hope that this important subject may be freely discussed and oral prophylaxis be given a fresh impulse; that disease of the mouth in its incipient stage may be recognized by dentistry and medicine alike.

DISCUSSION.

Dr. Runyan: I have never listened to so good a paper on the line of prophylaxis, and never heard so good a discussion from a layman as I have heard from Mr. Younger. Of course, you all know I have been working along these lines from an educational standpoint in connection with the schools for many years, and am thoroughly interested to know that the dentists and laymen are beginning to take more interest in it.

I have a set of slides and those of you who have taken the Dental Summary know of the publication in November and December numbers, and I want to say that it is not only locally that the matter has been taken up, but I have received letters from nearly every state in the union regarding that method of getting to the people. It was a surprise to me to know of the wide circulation of the Dental Summary. I believe there is scarcely a state but that there is an awakening in the profession and a desire to know more about these things. This work I began with the teachers and with the pupils and mothers' clubs, and I illustrate my talks showing why it is so absolutely necessary that the work begin with the children. In order to educate the people we have to begin with the children. To illustrate, I am going to give the reason why, in my opinion, local option is taking so firm a stand in the country. About twenty-five years ago the W. C. T. U. commenced the publication of the evil effect of alcohol. This was done through our school text-books and today the winning out of local option is due just to the fact that these young people have become voters. We have to begin early and work late in order to get this matter before the people, the proper education should be brought to the people and it can be done in no better way than through our school text-books.

It seems to me that every dental society should see to it and have a commission appointed to find a way of introducing this through our school text-books.

We should have ways of getting to the people; go before the schools, teachers and teachers' societies, bringing this matter out more fully before them. It is not so much because the people neglect themselves on purpose as it is because they have not been taught to see the necessity of it, and I do hope that this society will make an effort before the educational societies of the country and impress upon them that we are alive to the subject.

Dr. Wood: I would like to take this gentleman's place, and call this a school room, and, if I might be privileged to ask, "How many here practice prophylaxis?" I am very sanguine of the future for prophylaxis. About five years ago when the very strongest agitation for prophylaxis started, dentists who were practicing prophylaxis were scarcer than hen's teeth. I started prophylaxis myself, and it was a very common thing to have friends of patients come into my office and remark, "Now, my dentist didn't say anything about this thing." "They don't practice this prophylaxis; they never say anything about the cleanliness of the mouth," and so on. Today, when friends of my patients come into my office they say, "My dentist does that, too,"—almost invariably in Detroit. "Why, he has me come down now once a month or once in two months," whereas I never heard anything about it before.

It was a good point that Dr. Bennett made, that a dentist cannot practice prophylaxis without improving his methods in all other lines, and very materially, and every operation will be elevating. The dentist strives night and day; he dreams about it to know how he can construct a bridge, put in a filling and finish it so perfectly that the gum tissue will not be touched. If you can keep away from the gum tissue the whole problem is solved. Keep the gum tissues healthy, that is the most important point in

(This was a joint discussion of the paper by Mr. Younger, published in December issue, and that of Dr. Bennett in this issue of The Summary.—Editor.)

this very excellent paper which was offered today, to my mind. I want to say, as has been said, that this paper by Mr. Younger is the finest dental paper from a layman that I have ever heard, and I hope to live to hear a better one. The prophylaxis issue is the whole thing in dentistry today.

Dr. Loeffler: I simply want to add my word of praise to what has been said. I think we really ought to invite more men of this character to give us just a little diversion each time. I really think that there are many good things brought out at these meetings that the public do not know about, and which they ought to know, and we ought to invite them in. I am much in favor of prophylaxis, and think it ought to be enlarged on.

Dr. Lee: I believe this is an opportunity for the dentists of Michigan to put before the laity in concise and presentable form facts concerning prophylaxis. I would like to see the papers of Dr. Bennett and Mr. Younger published in pamphlet form and distributed to the members of the State Dental Society. I believe that with these pamphlets in our offices to hand to our patients, and let them at their leisure look over these facts, it would do a great deal toward educating the laity.

Dr. Zederbaum: I was very much interested in the subject, as you well know, for I have been active in a propaganda of this educational work for several years in various schools, sanitariums, hospitals, etc., and we know that this particular education is very much needed. Dr. Bennett read an excellent paper indeed, and a paper we all should appreciate. We realize that if this question was put to many of us in small cities that we invariably would receive the same reply, ''That we cannot confine ourselves to the treatment of prophylaxis inasmuch as the people do not understand it, nor can we confine ourselves to that particular branch of the work alone, for there is other work to do.'' That may be all true, and I realize the position, perhaps, as well as any one, being situated in a place of about 5,000, but there are three days in the week which I devote to that particular work nevertheless, and I do not stop with that; while the balance of the week is devoted to other work, whenever I see a patient that needs instruction, and that is pretty often, I assure you they receive it, practically as strong as any lecture that I am capable of delivering on every point. So this ought not to be our excuse at all. We ought to inform every patient what is needed and how it should be done, and these, when enlightened, will value the instruction. In doing this prophylactic work I get into the habit—I do not think I will be censured much for it—of giving each patient an orange wood stick and also a preparation with it, which I want them to use, showing them how and when it should be used, demonstrating this at the chair on my own or their mouths. I can tell, and so can you, within a very short time, whether they follow the instructions or not. It is such watchfulness and interest in your patients that helps your cause as well as theirs.

Regarding our own mouths, it was wisely mentioned in the paper, I doubt whether there are five prophylactically clean mouths in this gathering this minute, and I certainly could truly say that much of some of them. Example is the best thing, after all, better than precept. I want to keep my mouth in the best state of preservation and my gums in the best condition so that I can say to the patients that I have that work done for myself, and I certainly would not do anything to injure my teeth.

This morning on coming to this place of meeting, Dr. Lanphear and Dr. Wood were on the car with me. A lady got on with two children, one child in the lap, carrying the abominable ''comfort,'' which we know causes many troubles. When the car started with a jerk, as they, of course, always do only in Kalamazoo, the nipple dropped out. The woman picked it up, carelessly wiped it on the seat, and put it back in the child's mouth. Who knows what consumptive spit on that spot? I called the attention of my comrades to this one of many similar incidents. It is this point we want to make—we want to educate these poor ignorant people.

Just recently I returned from attending a meeting in Tennessee, and while they may be behind in some things, they certainly are ahead in one respect. There was a very fine paper read on this very important subject, and they did not lay it on the table or offer it simply for publication in a dental journal; a committee was appointed immediately to present that paper to the press of the city, and that is not all—to send it further to the *Saturday Evening Post* and *Ladies' Home Journal.* Backed up by a strong body like we have here, such papers as Dr. Bennett's and Mr. Younger's should be in the possession of every one, not only in the hands of members, but should be in the hands of the laity, in the public library, and, in fact, in all institutions of educational character.

Dr. Thompson: These were very good papers, and it struck me, while Mr. Younger was talking about baseball and the man having to brush off the home plate so that the pitcher can see where he has to shoot at, that is the principle of prophylaxis. We must have a clean area to do our work in, and those of you who do not secure these results before you start to work do not know anything about the advantages of working in a perfectly clean area. Along the matter of education, a little illustration that I read day before yesterday struck me so forcibly that I want to give it to you. It said it would be a hard task to remove all the dead leaves that were left on the trees by the winds of the previous fall, pick them off one by one, but Nature, through the forcing of the new sap, forces these dead leaves off so that they fall to the ground. This is just what the education that we start here will do with the quack, and help the man who practices prophylaxis.

Dr. Bennett (*closing discussion*): I think the paper has been very favorably received and very fully discussed. I thank you very much for the way you have treated it and treated me. I think the subject itself is a good one and one deserving of the very best criticism and work which we can give it.

SUGGESTIONS AS TO THE HANDLING OF ORAL INFECTION BEFORE AND AFTER OPERATION.*

By Dr. Adolph Bernard, Morgan City, La.

IN summing up a few suggestions for submission to you gentlemen at this meeting it is not intended to offer anything new nor what is not already known by all practitioners, but merely for the purpose of presenting to the dentist a formula or prescription for the preparation of an antiseptic solution that is a good oral prophylactic and styptic and which is always at hand and easy of access, as it can be quickly prepared by any good pharmacist, thereby saving the practitioner the worry, uncertainty and expense of using the different proprietary remedies commonly supplied for this purpose.

It can be used with advantage in all cases of pyorrhea alveolaris, gingivitis, stomatitis and any of the many oral affections that are met with in the mouth.

For the sake of convenience we shall call the preparation Eucamentheria and the formula follows:

Acid Salicylic ʒij.
Acid Benzoic ʒiv.
Soda Borate ℥ij.
Thymol ʒiss.
Alcohol ℥24.
Glycerine ℥24.
Oil Eucalyptus ʒi.
Oil Gaultheria ʒi.
Oil Mentha Pip gtt xv.
Acid Carb. gtt xv.
Purified Talcum ℥ss.
Water q, s ad ℥128.

---

*Read before the Louisiana State Dental Society, 1909.

Mix the acids and the borate of soda together with the glycerin in a glass flask and apply heat until they are dissolved, then allow to cool.

Dissolve the oils in the alcohol, also the thymol, and when the solution of glycerides is cool mix them together, adding enough water to make up the required quantity, then add the purified talcum and allow to stand for a few hours, then filter and the remedy will be ready.

It may be then colored any color desired.

For general purposes the following is the mode of employment: Eucamentheria, two ounces to about a gallon of water. This is to be used to wash the mouth thoroughly previous to the operation that is intended to cleanse and disinfect. In the case of extraction, where great infection exists, further disinfection may be obtained by the application of absolute alcohol over the infected area.

And then when the tooth is extracted the same solution is used to thoroughly irrigate the sockets, used in the water syringe either hot or cold as preferred, after which the sockets can be packed with plain sterilized gauze with the following mixture, which we call menthyform:

Thymol ʒii.
Camphor ʒii.
Menthol ʒiss.
Orthoform ʒi.

Mix the first three ingredients, they will form a liquid, then add the orthoform and it will be ready for use.

In some cases where there is very much infection and the area is very extensive, it will be necessary to re-irrigate and repack, but this is seldom needed.

With the above mentioned procedure your writer has had the most gratifying results. The pain that is so usual following extraction, whether with a local anesthetic or over an abscess, ceases immediately and the infection is quickly destroyed and healthy granulation is established and all further trouble is banished.

A good local anesthetic can be made by the following formula: Eucamentheria, cocain or eucain gr. v, adrenaline chloride ʒss, water q. s. ad ʒii. This makes a stable preparation and is always at hand and does not carry infection with it.

WHY INDIANS OF THE PLAINS WERE NOT TROUBLED WITH PYORRRHEA ALVEOLARIS

By W. A. Allen, D. D. S., Billings, Montana.

THERE were a great many reasons why the wild Indians of the plains were not troubled with pyorrhea, but the most important will be found in the following: The Mountain Crows, and most of the other tribes, were extremely clean about their persons. They bathed each morning in the rivers on whose banks their tepees were erected, and slept in the open air, as it were, among the fragrant odors of pine, cedar, juniper and hemlock.

Their clothing was worn loosely, allowing the free use of every muscle, and their diet consisted of the flesh of wild animals, such as buffalo, mountain sheep and antelope, which was eaten with very little cooking and no seasoning.

The above meats contain a considerable amount of phosphate that keeps the teeth hard and in good condition.

Another part of their daily food consisted of herbs and berries.

The choke cherry is an astringent which was eaten during the fall months and dried for winter use mixed with buffalo marrow and fat.

The camas root also was used for a tonic and has been found very beneficial to the general health, together with the bull berry, which contains citric acid.

Crow Squaw, 115 years old.

Besides this they kept their teeth clean with a powdered mineral known to exist in small fissures in the mountains. They took a small branch of choke cherry, about a half-inch in diameter, and pounded it to shreds at the end; this they dipped into water and then into powdered mineral brushing thoroughly their gums and teeth, which took on a beautiful polish. The medicine men told me the mineral would harden, cleanse and heal the gums, and I have found this to be true, having cured three mild cases of pyorrhea with it. I use it in treating all cases of pyorrhea and have done so for two years with great success.

The photo is that of an Indian squaw. She belonged to a tribe called sheepeaters and was one hundred and fifteen years old. She used the powdered mineral I mentioned all her life and had thirty-two teeth in her mouth at the time she died. The gums had only slightly receded, but the teeth were worn half way to the gums.

In another article I will tell you why the present Indians have pyorrhea.

THE OHIO STATE DENTAL SOCIETY

THE forty-fourth annual meeting of the Ohio State Dental Society, held in Columbus, Ohio, December 7, 8, 9, 1909, was probably the best meeting from all viewpoints, ever held by the organization. The attendance was the largest at any one meeting, and from what could be learned everyone went home feeling that he had been made a better dentist by being present.

This was really the first meeting under the new regime, for no component societies had been formed prior to January, 1909. Up to the time of the meeting twelve component societies had been formed, increasing the total membership of the State Society to about 800.

As the organization of the state is not yet complete, many districts at present without component societies were represented and the total attendance at this meeting was between 600 and 700.

The morning session of the first day was devoted wholly to the reports of committees and such other matters as properly came before the main body. The literary portion of the program began with the afternoon session and enthusiasm broke forth and spread like a prairie fire from the time the first paper was read and discussion began. An essay was presented by Dr. Sidney Rauh, of Cincinnati, its title being: "Dentistry for the Masses," and it was illustrated by means of the stereopticon. The paper pointed out the necessity for better observance of oral hygiene and the needs of dentistry among the masses. He advocated that the work of educating the public be instituted through the existing dental organizations along the lines of, first, through private, municipal, state and federal institutions; second, by popular talks to the public; third, by means of public clinics; fourth, through examinations of pupils in our schools; and suggested the assistance of newspapers, magazines and other periodicals through which to reach the masses by properly prepared material.

He praised the DENTAL SUMMARY for the campaign it has started; saying that it "seems to have worked out a feasible scheme and the work should receive the support and commendation of the profession."

Among the suggestions the essayist quoted from a report presented to the Odontological Society of Hamilton County, were the following:

"We would suggest that a permanent lecture committee be maintained by our society, to be at the disposal of all organizations that wish to receive instructions on Dental Hygiene."

"The slides, which have been shown, can serve as a basis for the talk, and the committee will assist any who feel diffident regarding public appearance upon the platform."

"The ultimate goal of a movement such as this must be the employment, by the city, of dentists at a salary, to take care of the indigent poor. The province of our society from now on must be a concerted move to popularize this idea. This can be done by attending all public movements which have as their object the improvement of general hygienic conditions."

"In addition to this a score of men should be prepared to deliver lectures in all the schools, at least where these examinations are made, the slides which are shown this evening making such a talk a very simple proposition."

Dr. W. T. Jackman, of Cleveland, chairman of the Oral Hygiene Committee of the State Society, made a report of what they have succeeded in doing in Cleveland in the way of obtaining privileges from the Board of Education, first, of making an oral and dental examination of all the school children (grammar grades) of Cleveland, about 56,000 in all; second, the privilege of establishing four clinics, for one year, for the care of the teeth of the indigent poor, and, third, the privilege of disseminating knowledge by lectures, to the public in preventive and prophylactic dentistry. Dr. Jackman then said that, "this is a tremendous task for the dentists of Cleveland, but listen; at the last meeting of the Cleveland Dental Society it was unanimously voted that each member should give a whole week's time during 1910 to this work, or its equivalent of $33.00. Over seventy members have already signed to this end."

"Cleveland proposes to set the pace for the world, for nowhere has such a gigantic scheme been proposed, and it will be carried out."

The chairman stated that he had sent to cities all over the state telling of what had been accomplished in Cleveland, and asked them to do likewise, with the result that examinations have been made in Youngstown, Canton, Delaware, Gallipolis and others are ready to begin the work.

He suggested that the State Society donate $500 to assist in procuring proper equipment for the educational side of the work.

Dr. W. G. Ebersole, Cleveland, chairman of the committee on Education and Oral Hygiene of both the National Dental Association and the Cleveland Dental Society, made a report of examinations in the Cleveland public schools and other data.

Prof. John W. Dowd, LL. D., of Toledo, O., in the employ of THE DENTAL SUMMARY to lecture before teachers' institutes, mothers' clubs and school children in Ohio, Michigan and Indiana on Oral Hygiene and Education, was called upon and gave a brief outline of the work that had been done and is in contemplation. He said that addresses already had been delivered before the Northwestern Ohio and the Central Ohio Teachers' Associations; that he was to address the Champaign County teachers at Urbana on December 11, and that he had received calls from Canal Dover, Dayton, Kenton, Lima, Sidney and many other cities.

His remarks were received with tremendous applause, and every discussor mentioned the work of THE SUMMARY in terms of highest praise.

On Tuesday evening Dr. W. H. Whitslar gave as a president's address a scientific paper on "The Human Hand." This excellent presentation was ably discussed by Mr. W. G. Benham, of Columbus, author of "The Laws of Scientific Hand Reading." These must be read to be fully appreciated, and we might add that all papers and discussions will be published in THE DENTAL SUMMARY.

Dr. George E. Hunt, of Indianapolis, read an essay entitled, "Some Points in Diagnosis." Regarding the paper the writer said: "It is my desire and hope to refresh your memory regarding several well known points, and to stimulate a greater interest among you in the subject of a correct diagnosis of some of the dental ills with which we are daily brought in contact and one or two, perhaps, not so commonly seen, but still not rare." The subjects considered were, Primary Dentition, Alveolar Abscesses, "Lame" Teeth, Pyorrhea, Leucoplakia, etc. The paper was an excellent one.

Dr. M. L. Rhein, of New York, read a paper on "The Treatment of Inaccessible Root Canals." This was illustrated by skiagraphs and other slides. It was an admirable paper.

Dr. Charles P. Pruyn, of Chicago, read an instructive essay on the subject, "Will Gold and Porcelain Inlays Replace Gold and Amalgam Fillings?"

Dr. I. N. Broomell, of Philadelphia, presented a paper on, "The Adventitious Effects of Large Masses of Gold in Contact with Tooth Tissues." It was illustrated with slides, reproductions from sections of teeth, showing what changes had taken place in the tissues under gold fillings, crowns, etc. The paper showed careful preparation and much search work and must be read and studied to be fully appreciated.

All these papers will be published in THE DENTAL SUMMARY.

Wednesday and Thursday mornings were devoted to clinics, of which there were more than one hundred, devoted to various phases of dental practice.

PRINCIPAL THINGS DONE AT THE MEETING

The Society made an appropriation of $500 to further the work of the education and oral hygiene committee in Ohio.

An American Miller Memorial was sanctioned.

The resolutions adopted by the Columbus Dental Society, suggesting the advisability of raising funds for a memorial to the late Dr. W. D. Miller were presented to the Ohio State Dental Society. The matter was referred to a committee of three, consisting of Dr. E. C. Mills, chairman; Dr. J. R. Callahan and Dr. S. D. Ruggles.

These resolutions were printed in the dental journals some months ago and copies sent to many state and district societies for an expression of opinion regarding such a memorial. The resolutions were presented to and endorsed by the National Dental Association at its last meeting.

After summing up the suggestions and expressions that had been received, the committee recommended the adoption of the resolutions by the State Society, and recommended that the memorial to Dr. W. D. Miller be a bronze, somewhat similar to that of Horace Wells, of Hartford, Conn., and be located in some suitable public place in the capital of Dr. Miller's native state.

The report was unanimously adopted and the committee given power to submit some definite proposition to the profession and proceed at once to the raising of funds for a monument that will be a credit to both the profession and to Dr. Miller.

We predict that the efforts of the committee having this matter in charge will be earnest ones and their success must be measured by the profession's estimate and appreciation of the great work of Dr. Miller.

The following resolutions, offered by H. C. Brown, were adopted:

Whereas, In recent years there has been a decided and far-reaching movement, in both the medical and dental professions, toward establishing prophylactic and sanitary measures, to the end that disease and unsanitary conditions may be reduced to the minimum, and

Whereas, The President of the United States, in his recent message to Congress, recommends the creating of a National Bureau of Health; therefore, be it

Resolved, That the Ohio State Dental Society most earnestly endorses the establishing of such a Bureau and pledges its loyal support to such a bill; and be it further

Resolved, That the Secretary be, and is hereby instructed to mail a copy of these resolutions to President Taft, the Ohio Senators and Congressmen, and that the same be spread upon our records.

The president, Dr. W. H. Whitslar, presented a beautiful silver mounted gavel to the society, the space on the old gavel being completely taken up by the names of the forty-three former presidents engraved thereon.

The Society elected Dr. C. P. Pruyn, Dr. M. L. Rhein, Dr. G. E. Hunt, Dr. M. L. Ward and Dr. I. N. Broomell honorary members.

By motion every component society was privileged to have one member of the State Society annually, at the expense of the State Society, to give a paper or other presentation to its society.

Members who have died during the past year are: Dr. F. S. Whitslar, Dr. A. S. Condit, Dr. J. F. Siddall, Dr. G. D. Billings, Dr. G. W. Woodbourne.

One member was expelled from the Society for unethical practice and another is under investigation.

The Society approved the reorgnization of the National Dental Society on broader lines and the establishing of a journal for the publication of its transactions.

A vote of thanks was tendered The Ransom & Randolph Co. for the elaborate programs and other donations. A response was made by Mr. C. S. Bigelow, president of the Company.

It was voted to include a subscription to THE DENTAL SUMMARY, the official organ, in the regular dues of each member in good standing, beginning January, 1911, the State Society paying the extra amount to cover the expense.

By vote the rule regarding compulsory membership in component societies, for those living within the jurisdiction of a component society, will be strictly adhered to.

An entertainment and smoker was held Wednesday evening. The after dinner speakers were: Prof. J. W. Dowd, Toledo; Dr. M. L. Rhein, New York; Dr. J. P. Corley, Greensboro, Ala.; Dr. G. E Hunt, Indianapolis; Dr M. L. Ward, Ann Arbor; Dr. I. N. Broomell, Philadelphia; Dr. C. P. Pruyn, Chicago; Dr. H. B. Tileston, Louisville, and Dr. M. H. Fletcher, Cincinnati. The theme running through all the speeches was Oral Hygiene. They couldn't get away from it.

An *ad interim* committee was appointed and consists of Dr. M. H. Fletcher, president; Dr. F. R. Chapman, secretary, and Dr. J. R. Callahan, who will have authority to transact any business for the Society during the time between its meetings.

During the meeting an Ohio Alumni Association of the Dental Department, University of Michigan, was organized, the charter members being, Drs. George H. Wilson, '78, Cleveland; H. F. Harvey, '79, Cleveland; W. H. Whitslar, '85, Cleveland; L. P. Bethel, '85, Columbus; L. L. Barber, '85, Toledo; A. M. Harrison, '87, Columbus; E. C. Mills, '89, Columbus; W. A. Price, '93, Cleveland; J. K. Douglas, '94, Sandusky; C. P. Sweney, '95, Cincinnati, and E. S. Braithwaite, '08, Lakeside.

Officers elected are, H. F. Harvey, president; J. K. Douglas, vice president, and E. C. Mills, secretary.

Drs. H. B. Tileston, Louisville, Ky., and M. L. Ward, Ann Arbor, were elected honorary members.

The meetings will be held annually during the session of the Ohio State Dental Society.

Officers elected for the ensuing year are: President, Dr. M. H. Fletcher, Cincinnati; first vice president, Dr. A. O. Ross, Columbus; second vice president, Dr. C. R. Converse, Springfield; secretary, Dr. F. R. Chapman, Columbus; treasurer, Dr. W. A. Price, Cleveland.

Board of Directors for three years, Dr. W. H. Todd, Dr. H. T. Smith, Dr. W. H. Whitslar and Dr. W. A. Barber.

The next annual meeting will be held in Columbus, the first Tuesday, Wednesday and Thursday in December, 1910.

PREPARATION OF TOOTH FOR PORCELAIN JACKET CROWN

By Harris J. Frank, Chicago, Ill.

With a very thin stone and with a small jet of cold water or compressed air playing on it constantly, the tooth is ground on the mesial and distal surfaces, removing all undercuts and contour from the neck to the cutting edge; then, with small stones, grind on the labial and lingual surfaces, removing as little of the tooth as possible consistent with alignment to the adjoining teeth and the bite, which leaves the tooth in a sort of a square and cone-shaped appearance; then, with sharp fissure burs the corners are rounded and a square and distinct shoulder is cut all around the neck, slightly above the free margin of the gum so that the adaptation of the crown to the neck of the tooth may be perfect, leaving no shoulder at the junction of the crown and root after the crown is adjusted permanently.—*Dental Review.*

COCAIN AND THE RUBBER DAM

By Levi C. Taylor, D. D. S., Hartford, Conn

We sometimes hear dentists objecting to the use of the rubber dam, because the patients so much dislike it. Allow me to say that if you will take some *finely powdered* cocain, pour a small pile on a fresh piece of paper, moisten a spatula and carry a little on the gums, outside and in, of all and more teeth than are to be enclosed in the dam, and caution your patient to avoid swallowing for two or three minutes and then to expectorate, much of the dislike will be overcome.

I have been surprised to see what can be done in excavating sensitive teeth, to say nothing of overcoming the dread of applying the rubber dam. I have used this method for fifteen years without the first symptom of bad results. The injection of cocain should be condemned as too many complications follow.—*Dental Brief.*

THE·SUCCESSFUL DENTIST

PERSONALITY

By G. E. Harter, Toledo, Ohio

WHAT is Personality? What is that mysterious Something that makes some men easily successful in any line of work, while other men, equally capable by education and study, fail to achieve any marked degree of success?

Let us see if ordinary, everyday business experience cannot supply a clue to the mystery:

The publishers and the editor of The Dental Summary frequently receive letters from dentists everywhere, expressing approval of its methods, satisfaction with its policy, and declaring that they are made better dentists by reading it. Yet, just the other day, a letter came, asking to have the name of the writer dropped from the subscription list—for what reason do you suppose? Simply because the reading of The Summary had not taught him how to collect higher fees—to get more money for his work!

Now, what is the difference between the two classes of men represented by the writers of the two kinds of letters mentioned? Why do the first find in The Summary just the help they need, and why do the others expect and demand something different, something more elementary, something dealing with the fundamentals necessary to the lowest and simplest forms of success in life—the mere getting of money?

As the writer sees it, the difference is one of Personality; of development, of growth toward real manhood.

Expressed in terms of the profession, the first represents men who are "professional;" who seek only to fill their high office to the best of their ability in the light of the most advanced methods and skill, being satisfied to reap the rewards sure to follow such advancement. These men, whatever their work, are fulfilling their vocation, their calling; they are imbued with the true "professional" spirit; they seek to become more and more adept, better and better able to put into expression through their daily work the knowledge they have acquired, the ability into which they have grown.

Such men do not ask more able men to guide their hands, to lend them their eyes, to put words into their mouths; they have passed the chart class, and are in an advanced grade. All they ask is to be kept abreast of the times in all that affects the best interests of their profession in relation to the great public, to which they wish to stand in the attitude of real benefactors, helpers, teachers and guides. To such men the actual work in the operating room and the laboratory is secondary, while the balance sheet, the record of financial gain, hardly enters into their thinking.

The second type represents that great class of men who are in their particular line of work not because they love it, not at all because they see in it an opportunity to help mankind and improve the world as a place to live in, but for what they can get out of it—who measure success by dollars and cents, to whom nothing is of value that does not increase their balance at the bank. Such dentists are followers, never leaders; to such, dentistry is simply a gainful occupation, an avocation, a trade; and it is just because this class is so large that members of other professions look with more or less contempt upon the claims of practitioners of dentistry to recognition as professionl men.

In the words of our text, the first type has developed distinct personality; are different; stand out as beacons in the road to success; mean something in the world; have their own methods; follow their own high ideals wherever they may lead, doing every day the best that they can, being sure, within themselves, that if they "give to the world the best they have, the best will come back to them."

Without formulating any rule of life, perhaps unconsciously, these men are living in harmony with the great law that makes for personal success. Perhaps without any knowledge of psychology, they have within themselves the innate consciousness that the universe is a unit; that no man can, eventually, get out of the world more than he puts into it; that the Great Law requires at the hand of every man his very best work, no matter what the material rewards may be at the moment.

The second type is headed straight for the scrap-heap, no matter what the result of work done, in dollars and cents, may be. Men of this class are out of harmony with the universe; they seek to take without giving; to have without due equivalent. They seek to increase their receipts without giving greater value. They are the highwaymen of the race, and their end is failure.

That many men of the first type are not getting their due is well known and taken fully into account; but such men know that the way to increase their incomes lies along the line of better service, more able aid to the great tide of evolution that is now sweeping our race to a higher pinnacle of perfection, physically, mentally and spiritually than ever before has been reached on earth—not by hypnotic suggestion, not by artifice, not by anything but harmony with the simple laws of growth.

Here is a concrete example: The writer was, at one time, intimately acquainted with two printers, who worked side-by-side for many years. Each was receiving the same pay; they were equal in productive capacity in the eyes of their employers, although one of them considered himself far superior to the other, and this opinion was shared by the other.

The time came when the better printer considered himself entitled to an advance in pay and asked for it. He was told that business conditions at that time would not warrant an increase. He at once began to "soldier on his job," declaring that he was earning more than he was getting, and that, until his pay was increased, he meant to give just so much service as he considered that his wages warranted.

A short time after, one of the editors of one of the publications issued by the concern employing both of these printers, died suddenly, and it became necessary to fill his place. The better printer of the two was also superior to the other in education, was a better dresser, was much more popular with "the boys," and if any man who knew the two superficially had been called upon to decide, he would have been chosen to fill the vacancy. But what actually happened? The poorer printer, the unpopular fellow, the man with smaller degree of education, was chosen, the new position carrying with it more than double the pay then earned by the best of printers. Why?

The answer goes to the very heart of things. He simply did the best he could, regardless of pay. He put into his work all there was in him from day to day—not with any idea of eventual results, not because he knew the great law of compensation and was consciously trying to live in harmony with it, but simply because he had a developed personality; because he was animated by motives which are certain to bring success sooner or later. He gave to the world, represented by his daily work, the best that he had, and the best came back to him.

Of course, this choice greatly embittered the other man; he loafed on his job harder than ever; cursed his employers for their "favoritism," and soon was asked to find employment elsewhere. Where is he now? At last accounts, he had given up the printing business, and was still trying to get something for nothing in one of the many shady occupations, bordering closely upon the criminal, open to men who look upon money as the one end and aim in life that is worth anything.

Promotions came fast to the other man. Within a year another and a better place opened up for him; by the end of the second year he was managing editor of an important daily newspaper, his income increasing, his real abilities developing—still doing his best to earn all that he was getting, still striving to be something and do something of use to the world.

Is it this attitude toward the world and our work in it that constitutes what is known as personality? No; it is simply the method by which personality is developed. Personality is the outer development of character; the visible signs by which all men may read and know the character within. As Carlyle says: "The thing visible, the thing in any way conceivable as visible, what is it but a garment, a clothing, of the invisible within?" And: "All visible things are emblems; what is seen is not the reality. Matter exists only spiritually, and to represent some idea, and body it forth."

If any man wish to appear strong, let him become strong; strong within; strong in some dominant idea; strong in his devotion to the highest demands of his calling in life. The weakest face ever seen may be made strong in a year by a direct facing about of motives and ideals—on the contrary, the strong face is sure to grow weak if high ideals are abandoned, and lower, weaker ones taken up instead. This is the law; and happy are those who understand it; happier those who know and consciously shape their lives in accordance with it.

Such men do not and need not care what estimate is placed upon them for the time by the crowd: in harmony with themselves, with the highest aims of the race, determined to give to their chosen work in the world the best they have, thus making of the humblest calling a true vocation, instead of a mere gainful avocation, occupation, they are sure to rise in the world, sure to leave their mark in the sands of time, sure to gain the respect and confidence of all able to see beyond the end of the muck-rake with which common men seek to draw to themselves money and power beyond their deserts.

Personality is the outer sign, the hall-mark, the emblem, of the man within; it is that sign seen of all men, that proclaims the earnest, honest worker; the man who constantly seeks to increase the value of his work in the world, regardless of mere temporary gain; it is that by which Character is distinguished; by which the man of character is lifted above the common herd; by which he stands out among his fellows as a "man of mark."

DO you wish to be the companion of noble men? Make yourself noble and you shall be. Do you long for the conversation of the wise? Learn to understand it and you shall hear it.—*Ruskin.*

MISCELLANY

A PILGRIMAGE TO THE OLD HOME OF THE LATE WILLOUGHBY D. MILLER

By Drs. E. C. Mills and H. M. Semans, Columbus, Ohio

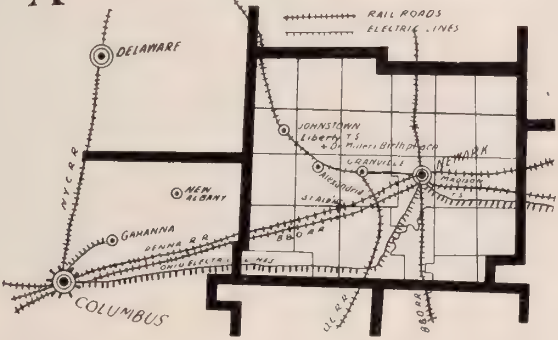
GENERATIONS have made their advent and passed into oblivion since John Milton, in his immortal epic penned the prophetic lines:

> "The childhood shows the man
> As morning shows the day."

It is doubtful whether any votary of dental or medical science furnishes a more striking illustration of this truth than our lamented Willoughby D. Miller. We know him by his contributions to the scientific achievements of dentistry. In considering the wide range of his investigations with their fruitful results, it requires some effort to free our minds of the impression that Miller, and others who have from time to time appeared in the arena of science have been masters in her realms *ab initio,* and at their bidding she has unceasingly unfolded her mysteries.

A

Map of Licking County, Ohio and its Townships.



Prodigies are not uncommon in any field of knowledge, but their ease in grasping discovered truths seems fatal to any effort at originality, possibly owing to the lack of that systematic application so characteristic of such a student as Dr. Miller, whose qualifications were the result of studious application rather than to a chance gift of nature.

In order to become familiar with places associated with Miller's childhood, the contributors of this article, in company with Dr. A. W. Newell and Mr. W. L. Millikin, planned a pedestrian pilgrimage for November 7th, 1909. The Col., New Albany & Johnstown traction carried our party to Gahanna (see Map A) and at 7:15 a. m. we began our trip of 24 miles via Alexandria to Granville, arriving about 5 p. m. Thanks to the bracing air of a beautiful autumn day, good roads and picturesque scenery, the trip was a most enjoyable one, not considering, however, those ill effects consequent to a pedestrian trip of this distance to the inexperienced.

To Mr. Ernest Henthorne, whose residence is about three-fourths of a mile west of Alexandria, we desire to again express our thanks for his hospitality and the liberal amount of cider with which he refreshed our party.

At this point the monotonous level country becomes undulating, and further on becomes still more interesting when diversified by the hills and valleys so characteristic of Licking county.

A short distance from the Henthorne residence we cross a picturesque covered bridge which spans the Raccoon, one of several streams, which, spreading over the country like the fingers of the hand, unite and form the Licking River. The Raccoon has its upper waters near the village of Johnstown, and its tortuous course would indicate an unwillingness to quit this fertile and picturesque district.

These beautiful streams and teeming valleys were the goal sought by those pioneers who were men of enterprise and resolution, with a common sense which supplemented any deficiency in learning beyond the rudiments of a fair education. Their thrift had converted this territory into fertile farms, set in a landscape of natural beauty. It was amid such surroundings that the subject of this sketch first saw the light of day, and these scenes, with the inspiring atmosphere of a nearby educational town, ignited the spark that fired his ambition and gave him an unquenchable thirst for research.

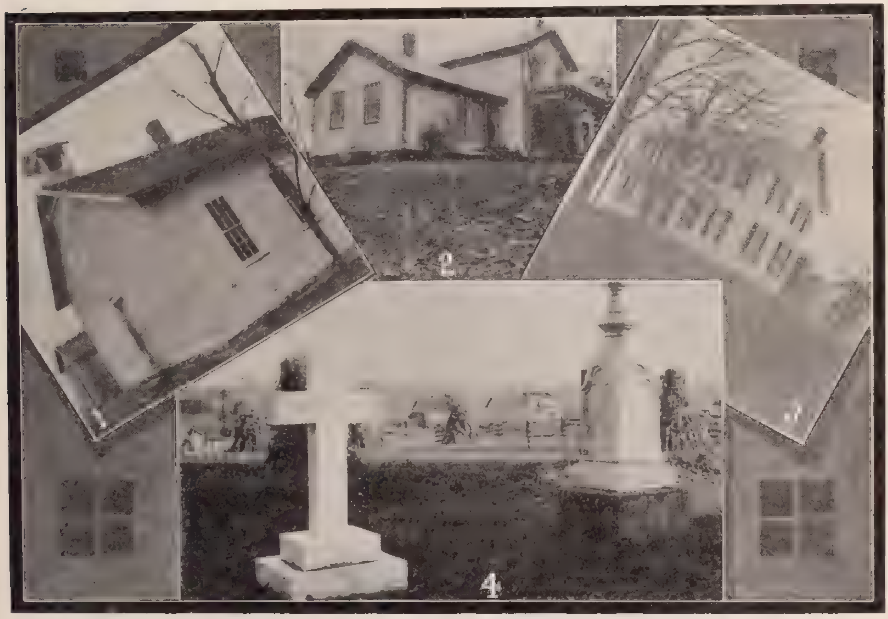
Granville, some six miles from his birth place, was settled in 1805 by New Englanders of a high grade, with sturdy and solid qualities. The history of the settlement is but a rehearsal of the incidents following many of the settlements in the Northwest Territory. The organization of a church that was transplanted with the colony from Granville, Mass., was a significant act, as it no doubt gave the initial impulse to that religious character for which Granville has ever been noted. Through its schools, notably Denison University, it has gained its widest influence. It is a place of culture, where character is developed, and by its students scattered throughout the world its fame has spread far and wide.

Though Dr. Miller's field of labor was in a foreign land, thousands of miles by land and sea from this Eden, something in his nature seemed in close communion with this region. The honors showered upon him, the applause that greeted him only served to deepen his patriotism and confirm his allegiance to the land of his birth. His motto and creed was:

> "My Native Country, thee
> Land of the noble free,
> Thy name I love—
> I love thy rocks and rills,
> Thy woods and templed hills,—"

and no doubt made him firm in his resolution that "he would not give up his American citizenship for any position whatever," when promised an "extraordinary" professorship in the medical faculty of the University of Berlin on a condition that would subsequently require him to become a *German citizen.

That he might have a stronger claim on this territory than one of mere sentiment, he purchased, in 1892, through the negotiations of his brother-in-law, D. C. Brooks, what was known as the Hon. Joel Tyler farm, consisting of 128 acres, for $8,500. Situated in St. Albans township the residence is the first one on the left after crossing the Raccoon, and is represented in Fig. 3. It may be of interest to note that this farm was awarded the first premium by the Licking County Agricultural Society in 1868 and 1872.



1—School.
2—Birthplace.
3—House on Dr. Miller's Farm.
4—Miller Burial Lot.

Since its purchase by Dr. Miller it has been farmed on shares by the doctor's nephew, Mr. O. A. Brooks, who has since bought it from the widow.

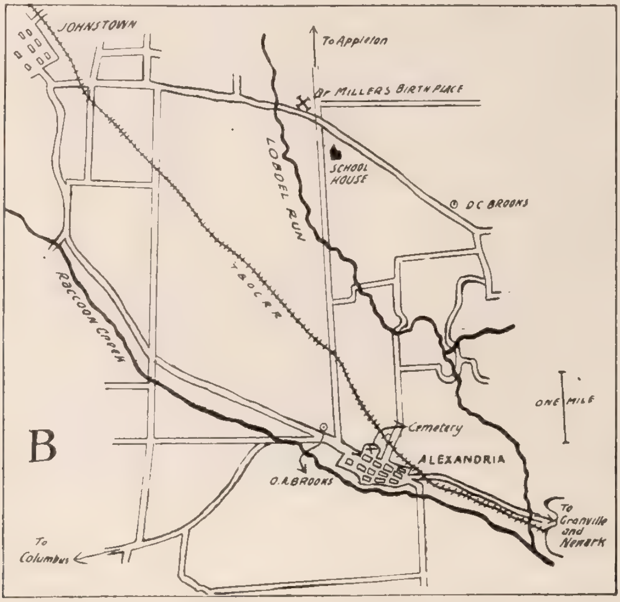
After his death in Newark his remains were brought to this residence,

---

*As evidence that Miller was not without honor in his native heath, we insert a comment appearing on the fly leaf of a pamphlet loaned by Mrs. D. C. Brooks, Miller's sister. "At the World's Medical Convention at the St. Louis Exposition in 1904, Dr. Miller won first prize, a $50.00 gold medal for best essay on the Science of Dentistry. The papers were submitted without names and judged on their merits alone. Germany made much ado about it, claiming the honor for German science, but Liberty township, Licking County, ought to have the honor."

from which his funeral took place on July 29th. Rev. R. B. Dunlap, pastor of the Congregational church of Alexandria, which church Dr. Miller attended during his visits, conducted the services. The pallbearers, selected from the family, were: O. A., J. M., and W. D. Brooks, sons of his sister, Mrs. Sarah A. Brooks; Wm. A. Rusler, son-in-law of Mrs. Brooks; James Bonnett, son-in-law of his brother, James L. Miller, and Frederick Ross, son-in-law of his sister, Mrs. Mary M. Ashbrook.

The dental profession was represented by Drs. N. S. Hoff, of Ann Arbor, Mich., and L. E. Davis, of Granville, O. A delegation of dentists from Columbus had arranged to attend, but were misinformed regarding the day of the funeral, it occurring a day previous to the time of which they had been advised.



A quarter of a mile east is Alexandria (Map B), a beautiful little hamlet of 600 inhabitants. Though it was laid out as early as 1830, with its modern residences it has the aspect of a new village.

The old inn, represented in Fig. 6, is an interesting relic of its early history, known in its palmy days as the "Buxton House," named for its proprietor.

Green Lawn cemetery, where Dr. Miller is buried, is a beautiful spot on the northwest edge of the village, to the north of the square in which are located the Baptist and Methodist churches and the village school.

Stately trees stretch forth their arms in salutation to the passerby, and the peaceful quiet is broken only by the pealing of the bells, the sweet note of the birds, or the voice of the boisterous village youth.

The wish of Crantor, a native of Cilicia, could not have been more happily fulfilled. Dying in Athens, on being asked where he would like to be buried, said:

> "It is a happy fate to lie entombed
> In the recesses of a well-lov'd land."

The Miller burial lot, on east side of the cemetery, is twenty feet square and is represented in Fig. 4.

The monument over Dr. Miller's grave is a gray granite cross, mounted on a double base of the same material, the design being about five feet in height and erected by his widow.

The inscriptions are in well executed raised letters. On the arms of the cross are the words:

> "And underneath are the
> Everlasting arms."

On the base is the simple inscription:

WILLOUGHBY DAYTON
MILLER
Aug. 1, 1853. July 27, 1907.

Another monument of the Miller family on this lot is of marble and has the following inscriptions:

(North Side.)

Alma Miller Zartman, born Aug. 13, 1849. Died Sept. 5, 1891.

Roe J., son of O. A. and M. F. Brooks, Died April 22, 1893, aged 5 yr., 3 mo., 21 da.

(West Side.)
NANCY L. MILLER
Died
June 17, 1879
Aged
64 yr., 8 mo., 7 da.

(South Side.)
JOHN H .MILLER
Died
Sept. 23, 1889
Aged
76 yr., 6 mo., 22 days.

David C. Brooks, one of the thrifty and progressive farmers of Licking County, spent the early years of his life teaching the district school, which stood on the site of the one represented in Fig. 1. This school is where W. D. Miller received his first instruction, and while Mr. Brooks may have many laurels crowning his well spent life, no incident gives him a greater satisfaction than that of having been Dr. Miller's first teacher.

His precepts made a permanent impression on Miller's youthful mind and went far toward planting the seed that bore fruit a hundred fold in after years.

He has given much assistance and furnished data that have made the preparation of this article possible, all of which is hereby thankfully acknowledged. The kindness of his son, Mr. O. A. Brooks, on this memorable November day will always be remembered, for it was his thoughtful and interested aid that enabled our little pilgrim band to accomplish its purpose. His horse was the motor power of the first dental pilgrimage through the beautiful Lobdel valley.

The D. C. Brooks residence, with Mr. Brooks, his wife and daughter, Leota, in foreground, is shown in Fig. 5. It is situated 3½ miles north of Alexander in the Lobdel Valley, so-called from a run of that name, which flows across the southwestern part of Liberty township, and empties into Raccoon creek. It was at this residence Dr. Miller spent his vacations while a student at the Dental Department of the University of Pennsylvania, and here did his first dental operations, his nephew, O. A. Brooks, then a lad at home, doing the malleting with a leaden mallet.

5

6

About 1½ miles north of the D. C. Brooks residence is the birth place of Dr. Miller. A few slight alterations have been made, and it is shown in Fig. 2.

It is the residence on the farm now owned by Mr. O. E. Montgomery, located on the Alexandria and Appleton road, facing the east. John H. Miller, father of Dr. Miller, after his marriage in 1835, left his father's farm in Madison township and removed to Liberty township, about 18 miles distant, where he purchased a farm. In 1852 he bought another farm near by, to which he moved, and built the residence referred to. Here W. D.

Miller, the youngest child of the family, was born August 1st, 1853. By subsequent purchases this farm was increased to 370 acres, which included a tract of land called the Prairie, a swampy land of virgin soil, which was tiled by Mr. Miller. Through it he dug a sluice some four feet wide, from which tile extended on either side. John H. Miller (Fig. 7) was the most progressive farmer in his section—he had the first mowing machine and first corn planter drawn by a horse.

At the outbreak of the civil war, owing to age, he was unable to respond to the call for troops, but being an effective speaker he did much in raising volunteers for the Union cause.

They removed to Newark in 1865, where Mr. Miller conducted a harness factory for several years, selling his farm during the winter of 1869 to Noah Brown and Joseph Snider. Willoughby D. here attended the high school, graduating in 1871, and from here went to Ann Arbor, where he received his A. B. degree in 1875, spending his vacations during these years of study on the D. C. Brooks farm. After the death of Mrs. Miller, in 1879, Mr. Miller made his home with his daughter, Mrs. D. C. Brooks, until his death in 1889. From his estate Dr. Miller received no funds to assist him in his research work.

Fig. 7

Fig. 8

Mrs. Miller (Fig. 8) was quite skilled in decorative art work. They carefully fostered the natural bent of their children's minds and instilled in them their own industry and enterprise.

(*To be Continued.*)

MEN usually are not ashamed of being base; but they are ashamed when they suspect that baseness is attributed to them by others.—*Neitzsche.*

EDITORIAL

GET-TOGETHER CLUBS

IN different sections of the United States there is being manifested a desire for closer relationship between dentists, physicians and druggists, and clubs have been formed to further acquaintances and the interests of all concerned.

In Kingston, N. Y., they call themselves the "D. D. D." Association—(Doctors, Dentists and Druggists).

In Chicago they have a "Get-Together" club comprising dentists, physicians and druggists, and in a few other places will be found similar organizations.

The old idea that the dentist does not have to ask any favors of the physician or that the physician does not have to know anything about dentistry to carry on a successful practice, is wrong. As the sciences develop they are growing closer and closer together; in fact interweaving.

Dentistry comprises something more than the making of artificial substitutes, extraction and filling of teeth, and our medical friends should be given to understand as much.

At the recent meeting of the Northern Indiana Dental Society, the physicians of the vicinity were invited to attend the evening session and many were present. After listening to the papers and proceedings they declared themselves much surprised at what the dentists were accomplishing. It was a revelation to them and they saw dentistry in a new and true light.

There is much in common between physician and dentist and there should be a closer relationship. The rhinologist and neurologist can give the dentist many suggestions that will prove of real benefit to him in his practice. On the other hand, the dentist can impart much useful information to the rhinologist and the general practitioner.

How often have we heard of cases really needing the services of the dentist, that were discouraged by the family physician's remarking: "oh, that's all right; let it alone." The physician may have had honest intentions but he didn't know; and the worst of it was that he didn't know that he didn't know.

If the physician would stop and consider the harmful effects of decayed and abscessed teeth on the health of children, and how often they aid in perpetuating distressing and serious ailments, he would certainly be more particular to note the dental and oral conditions of his little patients, and request that the afflicted children receive necessary attention from the dentist. Physicians can do more for humanity in this respect than the dentists themselves, for the physician is brought into contact with the children often, while the dentist sees comparatively few of younger years, and seldom these unless they are suffering from diseased teeth. And then, perhaps, there already has been done a damage that will at least bring about faulty occlusion or irregularity of the teeth with which the child has to contend later in life.

These are but a few of the reasons why physician and dentist should know each other better.

There often is legislation to be enacted that is of importance to physician and dentist alike, and in some instances to the druggist as well. Think what an influence a combined effort would have on any legislature.

We believe "Get-Together" clubs should be encouraged. Mutual benefit would surely be derived from the meetings and social intercourse, and the public would profit immensely as well.

SCIENTIFIC PRESIDENTS

At the recent meeting of the Ohio State Dental Society, the president, Dr. W. H. Whitslar, suggested a new regime in presidential addresses, and that in the future they be of a scientific nature. For his address he presented a scientific paper on "The Human Hand."

This appeals to the writer as a good suggestion. Why should not the man who holds the highest office in the State Dental Society present something more than a mere report of what, in his mind, the members should do for the sake of the society, or a report of the work accomplished during the year, and laud the committees and others who were doing only their duty?

What is needful along these lines could be given as a report, the same as that from any standing committee, but let the address itself be a thing apart and of an educational nature.

The man who is privileged to become the president of a State Society ought to be competent enough to give the members in return something better than the moss-backed, stereotyped, ever-the-same old address, that is listened to with indifference by a handful of auditors, who sometimes look as though they came merely to be decent and were determined to live through it for the sake of their society.

The profession is making such rapid strides that many lines are opened for investigation. And this affords opportunity for search work or experiment by anybody who will take the time to do it. It seems that no worthier act of appreciation could be given by a president than something of this sort.

And it would not be for the benefit of the society alone, for he who delves into scientific investigation is himself the greatest gainer.

By adopting such a plan, members of the various State Societies would bring to light much that is now either unknown or imperfectly understood and from year to year it would add materially to the progress of dentistry. It at least seems worthy of trial.

DISTRICT EDITORS

It has been the aim of all connected with THE DENTAL SUMMARY to make it a useful publication and there is a desire to see it advance each year.

There is usually ambition where there is earnest effort, and here will be found no exception to the rule. We do not hesitate to say that we are ambitious to give the profession just as much useful information as can be obtained. This has been our endeavor in the past, and each year the magazine has brought an increased store of knowledge to its readers.

But after filling the larder so full as we have been enabled to do the past year, it became a serious question as to what could be done to make the SUMMARY still better and still more helpful the coming year.

Realizing the strength in organized effort, we decided to organize by appointing District Editors, located in different sections of the Unit d States, and these have been selected from among the most active and capable dentists in our profession as will be seen by glancing through the list. Each District Editor will keep a lookout for any new or worthy methods of practice advocated or used by any dentists in his district and when he learns of anything worthy, he will endeavor to have it written up for publication in THE DENTAL SUMMARY.

This includes also essays or ideas of a scientific nature, that would be instructive to dentists.

By this means the useful methods from all sections of the United States will be brought together into one magazine for the benefit of the profession generally, and should make an advance along educational lines.

The editors are urged also to contribute editorially and otherwise themselves, whenever they feel inclined to do so, and our readers will profit through their association.

THE DENTAL SUMMARY PRAISED

At the recent meeting of the Ohio State Dental Society the subject of Oral Hygiene was brought prominently before the members in essays, reports, etc., and was received with enthusiasm. Praise from every quarter was bestowed upon THE DENTAL SUMMARY for the Educate the People campaign it is furthering, and it was conceded by those who have been in closest touch with the oral hygiene movement that what THE SUMMARY is doing to educate the people in dental matters and oral hygiene has advanced the cause by at least five years.

THE SUMMARY intends doing all it can to further this movement, and its campaign is only begun.

PRACTICAL SUGGESTIONS

GUTTA-PERCHA PROTECTION TO THE CEMENT LINE OF INLAYS

By Percy B. McCullough, Philadelphia, Pa.

Coat the margin of the cavity side of the inlay with oil of cajeput or eucalyptus and adjust around its margin a thin roll of gutta-percha. Then warm the inlay sufficiently to soften the gutta-percha, and press the inlay home in the wet cavity, and carefully remove any excess which has pressed out. Then remove the inlay, being careful not to disturb the thin layer of gutta-percha in removing it, nor in cleaning from the inlay any that may have been pressed inward and would interfere with the adhesion of the cement. This done, dry the cavity and proceed to cement the inlay in the usual manner. The thin layer of gutta-percha will expand as the cement line disintegrates or dissolves, and will thereby protect the cement from further loss.—*Dental Brief.*

ONE OBJECTION TO AN INLAY

By J. E. Hinkins, Chicago, Ill.

One of the principal objections I have to an inlay is the material with which we have to set it. I have been convinced for several years that we cannot get a cement thinner than one seven-hundredths of an inch, because if we get it thinner than that the center of the molecules will separate. If you press the cement flat there is an air space left in the center, and if you mix the cement thin to get a certain consistency, you also get an excess of the acid, to the extent that you get a soluble cement.—*Dental Review.*

METHOD OF HOLDING A CROWN FOR POLISHING

Take a small stick of modeling composition, heat one end, dip it in shellac, and insert it into the open end of the crown, which has been previously filled with plaster mixed with salt. The salt accelerates the setting of the plaster, which will be completed by the heat produced by the polishing. Hold the whole under a cold-water spigot and polish. To detach the crown, simply pass it slightly over a flame. The stick and plaster will come out, leaving the interior of the crown absolutely clean.—*Bulletin du Syndicat des Chirurgiens-Dentistes de France.*

MECHANICAL FORCE–ITS ACTION AND REACTION

By J. A. Bullard, Chicago, Ill.

And now to apply some of the principles of levers, with which all are more or less familiar,—suppose, for instance, a case where it is desirable to supply a crown for a root,—say a bicuspid—which is none too solid in the process. In making a prognosis of the length of time this root would give service, if crowned, the length of the crown or power arm must be taken into consideration, for, of course, the longer the crown compared with the length of root the greater resistance the surrounding tissue must offer.

It might be necessary to use this same root as the abutment for one end of a four-tooth bridge from second molar to first bicuspid. Here, then, if you think about it, you will find that the force brought to bear upon this lever is doubled or tripled by the increase of occlusal surface borne by the abutment teeth, or practically an increase in the length of the power arm.

All kinds of appliances placed in the mouth can be classified in this way and so constructed as to increase their usefulness by taking advantage of these principles.

The length of cusps of the teeth play quite a part in the strain brought to bear upon the crown and root, forming, as they do, inclined planes against which force is exerted. Where we build prominent interlocking cusps on fillings, crowns or bridges, the lateral stress is greatly increased when small bits of hard substances are caught between the opposing inclined planes of the upper and lower teeth during the excursive movements of the mandible.

These same inclined surfaces may often be made of great service if they are formed in constructing crowns, bridges or artificial dentures so as to use the force developed upon them by the wedging action of the opposing teeth as they come into interdigitating occlusion during the mastication of food, to more solidly seat and support them.

And now, gentlemen, this little paper is not much more than an outline of what it might contain; but, such as it is, I humbly submit it for your consideration.—*Dental Review.*

TO KEEP AMALGAM BRIGHT

A simple solution of soda is better for cleansing fresh amalgam than alcohol. The amalgam does not darken afterward and retains a beautiful, pure color.—*Deutsche Zahnarztliche Zeitung.*

DIE METAL

Bismuth 48 parts, cadmium 13 parts, lead 19 parts, tin 20 parts. This easily fusible metal can be poured into wet plaster.—*Zeitschrift für Zahnarztliche Orthopadie.*

NEW PUBLICATIONS

History of Dental Surgery with Contributions by Various Authors—Edited by Charles R. E. Koch, D. D. S., secretary and lecturer on Dental Economics of Northwestern University Dental School. In two volumes; illustrated. Published by The National Art Publishing Co., Chicago, Ill., 1909.

The history of dentistry is scattered throughout a very extensive and diversified literature. This was exhaustively searched and the gathered gleanings have been assembled and are presented in these volumes.

The work opens with a History of the Development of Dentistry by Dr. C. R. E. Koch. In it he treats of Egyptian and Grecian Antiquity; Etruscan and Roman Antiquity; Saint Apolona, the Patron Saint; the Saracens and Arabians; Awakening of Western Europe After the Crusades; the Sixteenth and Seventeenth Centuries; First Reference to Gold Filling; Ambrose Paré, Father of Modern Surgery; the Eighteenth Century, Augusti Buddei; Pierre Fanchard and His Works; Conditions in England; the American Colonies; the Nineteenth Century; Efforts to Educate the Public; the Architects of Dentistry in the United States; the Pacific Coast; Early Chicago Dentists; Reminiscences of Early Dental Science; Early Fathers of Dentistry in Various Parts of the World; Nomenclature; Organization for Mutual Defense—Dental Protective Association; Dentistry in Armies and Navies.

This part of the work is concisely written and presents a fund of useful knowledge.

The next department contains a History of Operative Dentistry by Dr. Edmund Noyes. This is a well written chapter covering a history of, and materials and methods used in this branch of dentistry.

The next is a History of Dental Prosthesis by Dr. H. L. Ambler. He begins with a history of prosthetic dentistry in China, Japan, Siam, Phoenicia, Etruria, Rome, Greece, France, England and United States. He then considers the subjects of porcelain teeth, continuous gum plates, porcelain dentures, vulcanite and other materials and methods used in this branch of our profession. It is admirably presented.

In the next department is given a History of the Dental Journals of the United States, by Dr. W. H. Trueman. Beginning with the first American publication, *The Dental News Letter,* each dental journal is given consideration. It is a well written chapter and gives the profession a permanent record of value.

The History of Orthodontia is written by S. H. Guilford. Everybody knows Dr. Guilford's ability as a writer and this chapter is no less interesting than other writings from his pen.

The next is a Historical Review of Dental Literature, by Dr. E. C. Mills. This is one of the best written treatises in the book, presented by a man well versed in general history and gives us a valuable exposé of dental writings.

There is next a brief chapter on Oral Surgery, by Dr. C. R. E. Koch and Dr. Truman W. Brophy, and this is followed by chapters on Dental Education and History of Dental Schools, Dental Laws and Legislation, Dental Jurisprudence, Dental Societies, and International Dental Congresses and Dental Federation, in which much valuable statistical and other useful historical information is given.

Volume II is a Biographical History by Burton Lee Thorpe. In this volume we find well written and interesting sketches of all the pioneer American dentists, and a few of the many present day dentists who have done much to advance the progress of dentistry. Dr. Thorpe and the profession are to be congratulated, for the presentation is one of great value to dentistry.

SOCIETY·ANNOUNCEMENTS

CELEBRATION IN HONOR OF DR. G. V. BLACK

THE Chicago Odontographic Society has arranged for a great meeting, manufacturers' exhibit, clinic and banquet, to be held on Friday and Saturday, January 28th and 29th, 1910, and a cordial invitation is hereby extended to all ethical practitioners to be present on these occasions.

Exhibitors' Clinic, January 28th 1910, all day, at the Chicago College of Dental Surgery, corner Wood and Harrison streets.

Meeting, January 28th, 1910, at 8 p. m., in Handel Hall, 40 E. Randolph street. Essayist, C. N. Johnson, M. A., L. D. S., D. D. S.; subject, "The Selection of Filling Material and Methods of Inserting When Temporary Work Need Not Be Considered." The discussion will be opened by prominent men from all sections of the country.

Clinics, Saturday, January 29th, 1910, all day, at the Chicago College of Dental Surgery, by operators of national reputation.

Banquet—As a fitting climax to a great meeting we will all unite in a "Testimonial Banquet" to a great man, whom we all love to honor, Dr. G. V. Black. The banquet will be held in the Gold Room of the Congress Hotel on Saturday evening, January 29th, 1910, at 7 o'clock. Information regarding meeting or banquet will be furnished by any officer of the society, or by addressing the Clinic Committee, H. N. Orr, A. F. James, J. E. Schaefer, C. M. Cahill, Geo. N. West, chairman, 100 State Street, Chicago.

ALUMNI ASSOCIATION DENTAL DEPARTMENT MARQUETTE UNIVERSITY

The fourth annual clinic and manufacturers' and dealers' exhibit of the Alumni Association Dental Department Marquette University will be held in the Milwaukee Auditorium, Milwaukee, Wis., January 18, 19, 1910.

Every effort is being made to make this the most successful and interesting meeting of our Society. Men of national reputation will give clinics.

All ethical practitioners are cordially invited to attend.

W. F. STRAUB, *Secretary,*
721 Third St., Milwaukee, Wis.

IOWA STATE DENTAL SOCIETY

The forty-eighth annual meeting of the Iowa State Dental Society will be held at Des Moines, May 3, 4 and 5, 1910. Besides an especially strong program, plans are being made for a large dental manufactures' exhibit. Display space free of charge.

Spencer, Iowa.

THE G. V. BLACK DENTAL CLUB CLINIC

The Annual Clinic of The G. V. Black Dental Club will be held in the Old Capitol Building in St. Paul, on February 24 and 25, 1910.

At this writing there is every indication that this will be the largest attended and most interesting of all the clinics which the members have held.

Such well known men as Drs. Black, Johnson, Friesell, Chappel, Barnes and Woodbury will take part in the literary program. Operations will be made by Drs. Searl, James, Gallagher, Carlson, James, Yerke, Crandall, Fawcett, Moyer, Robinson, Clack, Beemer, Richardson, Robinson, Noyes, Black, Woodbury, Finn, Wallace, Moyer, Wedelstaedt and Cooke. There will be operations made with gold and amalgam. Drs. Beemer and Richardson will make and place cast gold inlays.

The table clinics will be of unusual interest. Dr. J. B. Ridout will demonstrate on both days of the clinic. Dr. C. P. Peterson will cast aluminum plates on both days.

Dr. F. B. Kremer will once more assist the members of the club with some things which will be most worthy of attention. Dr. C. L. Topliff will be present prepared to extract abnormally situated lower third molars.

Dr. E. J. Hart, of Madison, Wis.; Dr. M. E. Vance, of Lincoln, Neb.; Dr. G. F. Hauser, of LaCrosse, Wis.; Dr. W. W. Wold, of Jackson, Minn.; Dr. G. J. Couvrette, of Grand Forks, N. D.; Dr. B. F. Lockwood, of Yankton, S. D., will hold table demonstrations which will be of value to all.

It seems only necessary to announce the fact that Dr. C. N. Johnson will hold a table clinic to arouse the interest of his multitude of friends in what he will display.

The number of supply houses which have reserved space is sufficient guarantee that everything which is new and of importance will be on exhibition.

The profession generally is invited to attend.

For further information apply to

R. B. Wilson, *Secretary,*
Amer. Nat. Bank Bldg., St. Paul, Minn.

MISSISSIPPI DENTAL ASSOCIATION

The seventeenth annual meeting of the Mississippi Dental Association will convene in Jackson, May 24, 25, 26, 1910. All ethical practitioners are invited to meet with us.

L. B. Price, *Secretary,*
Corinth, Miss.

THE TEXAS STATE DENTAL ASSOCIATION

The annual meeting of the Texas State Dental Association will be held at Houston, Texas, May 10th, 1910. On May 11th, 12th and 13th the Association will meet conjointly with the Southern Branch of The National Dental Association at the same place.

J. G. Fife, *Secretary,*
Dallas, Texas.

THE TRUMAN DINNER

On the 22d of January, 1910, a complimentary dinner will be given to Dr. James Truman, D. D. S., LL. D., at the Waldorf-Astoria Hotel, New York, by his professional friends, as an expression of their appreciation, not only of his personal characteristics and worth, but of his many years of self-sacrificing labor as teacher, author, editor, and investigator, in the advancement of dental science and art.

It is the desire of the committee having this banquet in charge that all of Dr. Truman's friends throughout the world shall utilize this opportunity to express their appreciation of Dr. Truman either by attending the banquet or by communicating their good wishes and congratulations to him on that occasion. Those who desire to attend the banquet can communicate with Dr. S. G. Perry, treasurer of the committee, 130 West Fifty-seventh street, New York, and those who cannot attend and who desire to send letters or telegrams to be delivered to Dr. Truman may forward these in care of the Editor of the *Dental Cosmos,* corresponding secretary of the banquet committee.

As it is impossible for the committee to individually reach all those who will wish to take part in this celebration, and as it is desired that none shall fail to receive notice of it, the committee has decided to give notice in this manner through the various dental journals in the hope of reaching everyone who may in any way desire to participate.

EDWARD C. KIRK, *Corresponding Secretary.*

SOUTH DAKOTA STATE BOARD OF DENTAL EXAMINERS

The South Dakota State Board of Dental Examiners will hold its next regular meeting at Sioux Falls, S. D., January 11th, 1910, at 1:30 p. m., and continue three days. All candidates are required to take both practical and theoretical examination. The fee of twenty-five dollars ($25.00), together with application, must positively be in the hands of the secretary not later than January 2nd, otherwise the applicant will not be entitled to take the examination.

G. W. COLLINS, D. D. S.,
Vermilion, S. D.

MONTANA STATE DENTAL SOCIETY

I am pleased to announce that the next annual meeting of the Montana State Dental Society will be held May 6th and 7th, 1910, in the city of Great Falls, Montana. A good program is in preparation and this promises to be the best meeting of the kind the state has ever had.

Yours truly,
DR. R. L. SPAULDING, *Sec.-Treas.*

VERMONT AND NEW HAMPSHIRE DENTAL SOCIETIES

The Vermont and New Hampshire Dental Societies will hold a joint meeting at Rutland, Vermont, May 17, 18, 19, 20, 1910.

HARRY F. HAMILTON, *Secretary.*

NEWS AND OPINIONS

Convention of the Ohio State Dental Society.

Elsewhere in this issue appears a brief account of the doings of the Ohio State Dental Society, assembled in annual convention at Columbus during the second week in December.

The meeting was the largest, most interesting, and by far the most enthusiastic in the history of the Society, and the writer cannot refrain from an expression of surprise that every dentist in the state is not enrolled among the membership.

Dentists make up an important part of the citizenship of the state; they are entitled to far more consideration than mere numbers would indicate; alone, singly, as individual units, little if anything of importance in the way of legislation, etc., need be hoped for. The law-making and law-enforcing bodies in America are impressed by force of numbers, acting in harmony. Therefore, if better laws are to be hoped for, if the public is to be protected against imposition, if dental hygiene ever is to become a part of the health-code of our state, co-operation, solidarity, is essential.

It would seem, therefore, that every ethical dentist in the state would require no urging to enroll his name among the membership of the State Society; and, before the convention of 1910 we hope to see the membership at least doubled.

All of the valuable and instructive papers read before the recent meeting are to appear in THE SUMMARY in due time; and we do not understand how any dentist who cares to keep abreast of the march of progress in the ranks of his profession can afford to miss a single number.

The requirements for membership in the State Society are expressed in the Constitutions of the Component Societies and are uniform for all societies as well as for State Society; "every legal and reputable practitioner of dentistry within the jurisdiction of this society shall be eligible for active membership."

The organization of component societies and membership in them is of great benefit to the parent organization, to the local society and to the individual member. Each Component Society is privileged to invite, at the expense of the State Society, one member annually from the State Society as its guest, to present a paper or other contribution to the program. Also, membership in a Component Society carries with it membership in the State Society and is the only door to this society open to a dentist residing within the jurisdiction of such Component Society. Such members then have all the benefits of membership in both societies. By arrangement with the publishers of THE DENTAL SUMMARY the official organ of the State Society, this journal will be sent to every member **in good standing** of the State Society, beginning with January 1, 1911, and the subscription for the same will be paid from the treasury of the Society.

The dues from applicants for membership, not coming through a component, are five dollars. The annual dues from all members of the Society are two dollars and must be paid each year to maintain the member in good standing.

Dr. A. W. Newell, 185 E. State St., Columbus, O., is chairman of the Membership Committee, and will be glad to give further information to any ethical dentist desiring membership in the State Society.

Virginia State Dental Association.

The 41st annual session of the Virginia State Dental Association will be held at Stauton, Va., July 20, 21 and 22, 1910.

Every effort is being made to make this the most interesting meeting of our Society. Men of national reputation will give clinics and read papers. All ethical practitioners are cordially invited to attend.

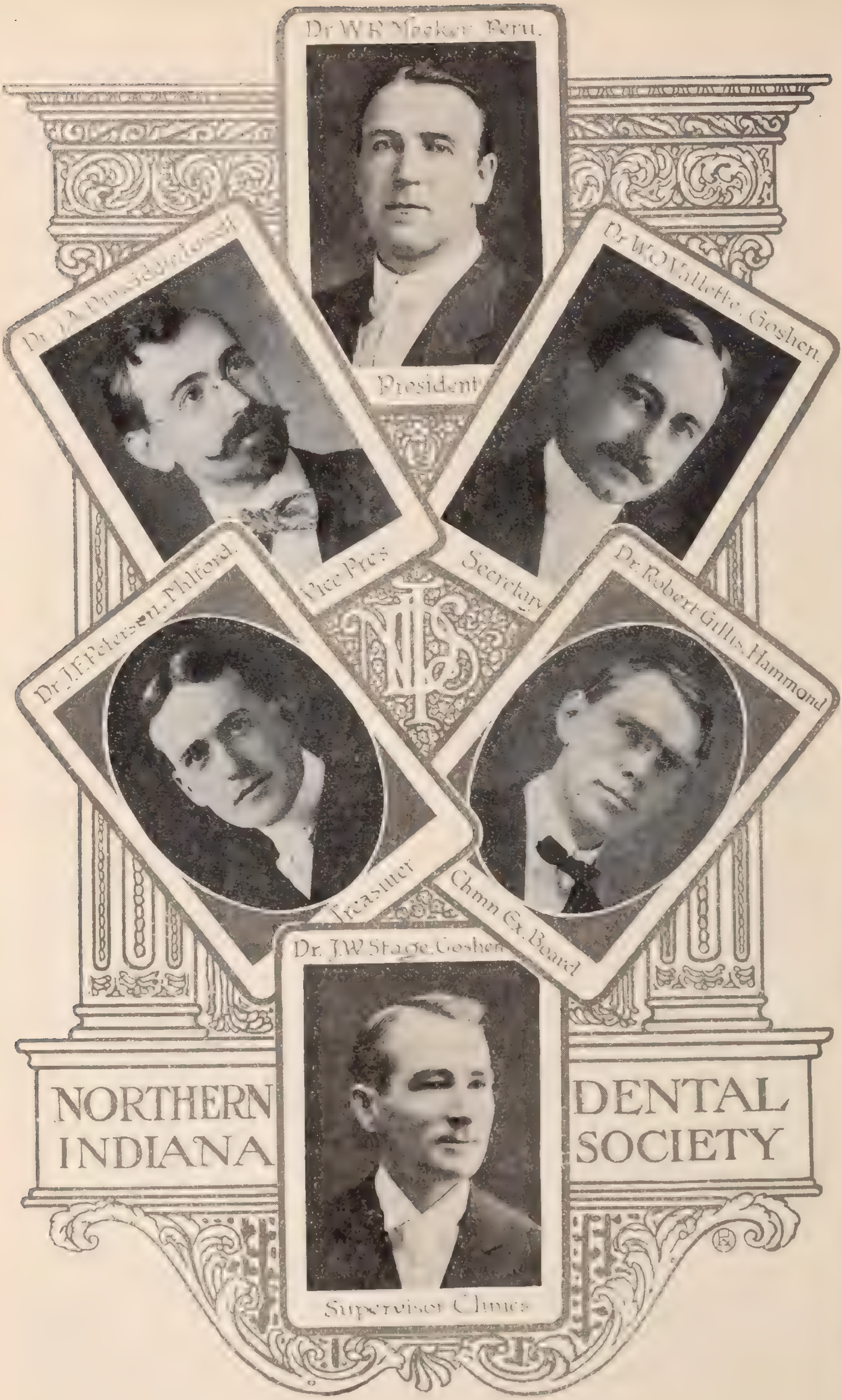
W. H. PEARSON,
Corresponding Secretary.

Louisiana State Dental Society.

The thirty-second annual meeting of the Louisiana State Dental Society will be held at the Grunewald Hotel in New Orleans, May 16th, 17th and 18th, 1910.

N. C. RICHARDSON,
Sec. Executive Committee.

The Pennsylvania State Insane Hospital has created a new position, that of resident dentist. The selection of this official was made in December.



NORTHERN INDIANA DENTAL SOCIETY

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX FEBRUARY, 1910 No. 2

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society
and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. BETHEL, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address	District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.	Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Minneapolis	Dr. F. B. Kremer, Masonic Temple	Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland	Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
Kansas City	Dr. Martin Dewey, Argyle Bldg.	D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.	Louisville	Dr. H. B. Tileston, Equitable Bldg.
Los Angeles	Dr. B. Frank Gray, Security Bldg.	Memphis	Dr. D. M. Cattell
San Francisco	Dr. Robert Dunn, 323 Geary St.	Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
Detroit	Dr. F. B. Spalding, Gas Office Bldg.	N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"	Richmond	Dr. F. W. Stiff. 600 E. Grace St.

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, in U. P. U. Countries, $1.75. Advertising Rates on Request

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

THE EFFECT OF STIMULATION PRODUCED BY HABIT DURING THE DEVELOPMENT OF DENTAL ARCHES AND PALATE*

By O. W. White, Orthodontist, Detroit, Mich.

AS we have at our disposal only a few minutes for this subject it will be necessary to make it as brief as possible. It is not that I have any new theories to advance in regard to the development of the dental arches that this paper is written, but in order that I might stimulate more interest and careful watchfulness of the profession over the developing mouths and faces of their young charges.

We will first consider the normal development of tissues involved in the formation of the dental arches and palate.

At birth we find on examination that the child's face is only about one-eighth the size of the cranium, while in the adult the proportion is as one to two. In early life practically the entire face seems to exist for the teeth. At three, the roots of the upper teeth touch the floor of the orbit and, as the large maxillary sinuses develop, the teeth descend and with the alveoli we have the descent of the hard palate.

---

*Read before the Michigan State Dental Society, June, 1909.

To show that the hard palate descends we have but to notice the position of the eustachian tubes; at birth we find them below the palate, later they are above.

The size and shape of the choanae during their processes of development also goes to prove the descent of the palate. At birth the height of their cavities is about six mm. and their breadth a little more. The size of these choanae develops very rapidly and the shape changes from a circular to an oblong channel. At the seventh year its perpendicular axis is twice the length of the horizontal, assuming the adult form.

ONE OF THE CHIEF FACTORS IN NORMAL DEVELOPMENT

In normal development we notice that when the mouth is closed there is a chamber which is sealed anteriorly by the teeth and lips and posteriorly by the tongue and uvula. In this chamber we find the tongue assuming an arched position, its dorsum lying slightly below the lingual aspect of the hard palate, creating a suction chamber in which the suction, while slight, is sufficient to stimulate the normal development of the bone and its proper downward growth.

If normal development of the face has taken place from birth to two years of age we find the teeth erupting in "occlusion." It is at this age that the professional care of the family dentist should start and not later in life.

Occlusion is the crowning success of the orthodontist, but its preservation is the life work of the dentist.

In the preservation of occlusion you retain healthy tissues, the greatest efficiency in mastication and proper facial balance which will insure your patient comfort, satisfaction and pleasure.

Fig. 1 shows normal occlusion at five years.

You have had opportunities of studying slides of normal occlusion many, many times, but no matter how often, I know it is always a pleasure.

When we find on examination of the mouth of children at ten years of age that eighty per cent. are more or less affected by malocclusion, is it not the duty of every one to endeavor to improve this condition as far as it is in his power so to do?

I am not advocating that every dentist should be an orthodontist, but I do say that the general practitioner should have such knowledge of occlusion and normal development of same, in order to recognize any deviation from the normal and diagnose the cause of such before serious results occur.

In Dr. F. B. Noyes' paper, published in the American Orthodontist, Vol. 1, No. 111, we find the following:

"The jaws are endo-membranous in their origin, but very early in their development a periosteum is formed over the surface of the bone already formed, and from that on the growth of the bone as an organ is through the function of the periosteum, together with the articular cartilages of the predental membranes. By these tissues the bone is built up, but by the periosteum the surface is sculptured and molded into form, and by the osteogenetic tissues enclosed within the surface of the bone, the internal structure is constantly being rebuilt, so as to adopt the organ to the forces to which it is subjected to the least possible weight. The more carefully this is studied the more evident it becomes that the bone is formed and removed in response to mechanical stimuli, and that the entire surface is arranged in harmony with the mechanical stresses which result from the forces applied to the teeth and the surface of the bone."

This being true, how important it is to allow no abnormal stimulation to exert its influence on the developing jaws and that we do not permit the loss of the normal.

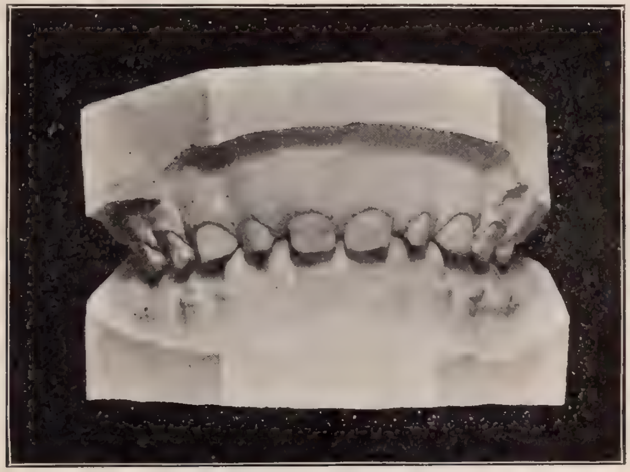


Fig. 1.

While habits of childhood are not responsible directly for as large a number of cases of mal-occlusion as we would at first think, still some of our more difficult and unfortunate cases have been, without doubt, caused by habit alone.

Of all the cases attributed to habit the most important and the most common is the "Habitual Mouth Breather."

I may be criticized for using the term "Habitual Mouth Breathe
as this habit often is the result of some previous conditions, such as n
stenosis or loss of tone of the muscle involved in the act of keepin
jaws articulated. Correctly speaking this would not be called a
nevertheless we find patients who are mouth breathers after the caus
moved, the nasal tract cleared and mal-occlusion corrected. This is
the most discouraging conditions with which the orthodontist has
tend.

Symptoms of mouth breathing may be easily recognized after has indulged in its practice for a few months, but it requires careful observation to diagnose such habit in its earliest stages before serious injury has been done to the arches.

The first symptoms are noticed during sleeping hours; the position of the body during sleep causes more congestion of mucous membrane than during waking hours; throat and mouth membranes are dry and patient usually arises with a headache. Later symptoms are, arrest of growth of nasal tract and upper lip and bones of face; the air spaces do not have proper circulation; the patient complains of constant cold and in severe cases of nasal stenosis the hearing is impaired. The lower arch develops into distal occlusion. Superior centrals are protruding and surrounding tissues are light and undeveloped.

Thumb or finger sucking habit acquired by young children is very disastrous to the developing arches when carried to excess. This habit frequently produces a very powerful stimulation on the developing arches and palate, which is sure to change the entire structure of bone tissue coming under its influence.

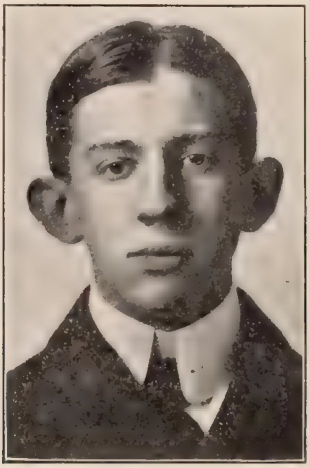


Fig. 2.

The effect of this stimulation varies according to the manner in which he child indulges in its practice and upon the resisting power of the sues.

The size of thumb or finger and the angle in which it is held determine large extent the effect on the bone tissue. Where the habit has been in- d in for any length of time, it is not a difficult matter to recognize the l appendix of the hand as it is usually distorted or undeveloped and ly clean. Other habits which produce abnormal stimulation are: *biting* This habit affects the lips as well as the teeth; the results cclusion of centrals and laterals, the extent of which depends on erted and the manner in which lip is caught between the teeth.

Tongue biting and tongue sucking are not uncommon habits to encounter in children. The effects are varied according to stress produced and the age at which the habit is acquired. The correction of tongue habits is without doubt one of the most difficult to contend with. The patient, as a rule, practices the habit during sleeping hours. I have used spurs on teeth in one case with quite satisfactory result. Some times the correction of malocclusion and the wearing of appliances during treatment correct the habit, but I have met with a couple of cases of tongue-sucking that failed to respond to treatment, the habit being so fixed that a cure seemed impossible.

Mothers often allow children to use rubber nipples to excess. I believe that their use is beneficial with bottle babies, if judgment is exercised and the child not allowed to use them for hours at a time. One feature of the rubber nipples on nursing bottles of milk to which I call your attention, is the opening in end. The hole should be small, so that only a small amount of food is obtained at a time, thus forcing the child to exercise the mouth in order to obtain food as nature intended it should.

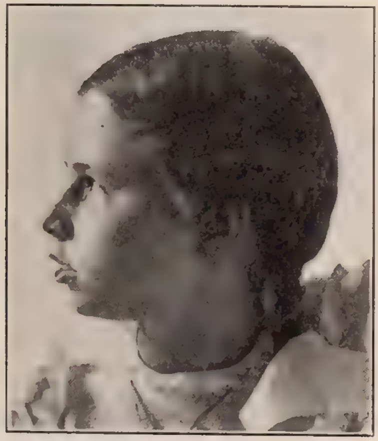


Fig. 3a.

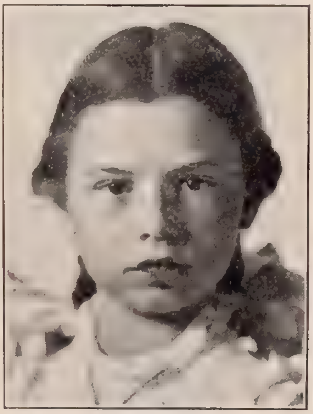


Fig. 3b.

In the following slides you will notice different effects of abnormal stimulation produced by habits of one form or another:

Case 2—Patient produced stimulation by lip biting; result malocclusion of centrals and laterals and over development of lip. Not an adenoid patient.

Case 3 *a-b*—This case shows effect of disturbed balance of face produced by habit of sucking corner of doll quilt. When a child, the patient was allowed to bite corner of quilt. Habit extended over a period of five years. Occlusion of left lower bicuspids and molars is lingual and the right buccal.

Case 4 *a-b*—Slide shows photos of patient thirteen years of age; malocclusion produced by sucking three fingers; no nasal obstruction other than thickened tissues and constricted nasal tract caused by abnormal bone formation.

Patient gained twenty-one pounds during first six months of treatment due to restoration of normal breathing and mastication.

Case 5 *a-b*—Primary cause of malocclusion in this case was excessive use of rubber nipples. Patient was allowed to produce an over-stimulation on the developing dental arch up to five years of age. Tissues responded, producing facial balance noticed on photo.

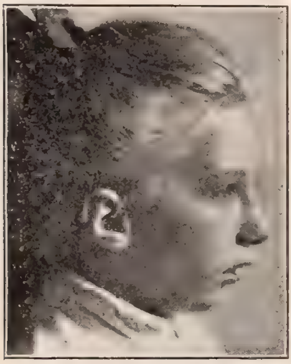


Fig. 4a.

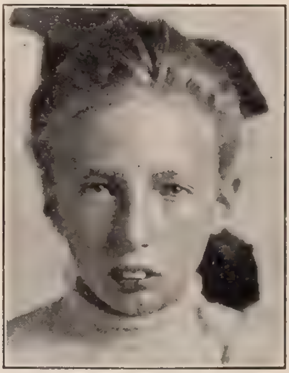


Fig. 4b.

Case 6 *a-b*—Treated case of thumb sucking. Severe malocclusion produced by stimulation from habit of thumb sucking; no nasal obstruction; patient became normal breather after correction of case.

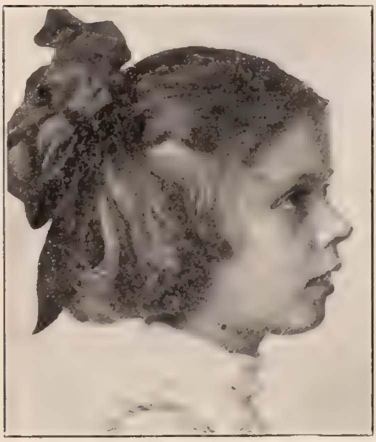


Fig. 5a.

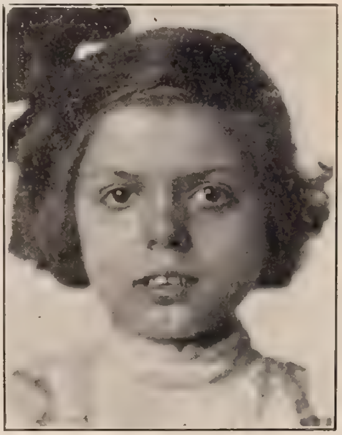


Fig. 5b.

Case 7 *a-b*—Habitual mouth breather. Adenoid child.

Adenoids were removed at a very early age and nasal passage kept in healthy condition; child continued mouth breathing from habit; muscles lost tone and malocclusion developed to a marked degree. (*b*) Shows correction of malocclusion.

Case 8 *a-b*—In this case nasal obstruction and thumb sucking both contributed to the development of the malocclusion producing a lack of stimulation to some parts and over-stimulation of bone tissues involved. (*b*) Correction of the malocclusion.

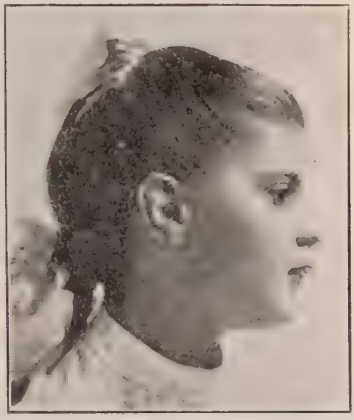


Fig. 6a.

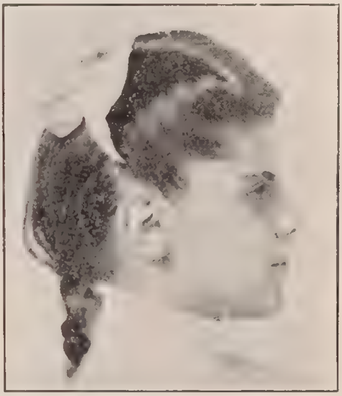


Fig. 6b.

Case 9 *a-b* -Finger sucking; loss of teeth and nasal obstruction are responsible for conditions of facial development shown in (*a*). Corrected case shown in (*b*).

Case 10 (*a*) Thumb sucking child three years of age. Notice effect of abnormal stimulation on superior dental arch and the arrested growth of lower.

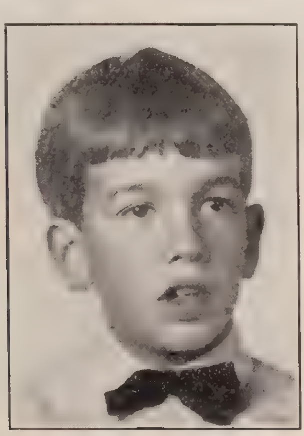


Fig. 7a.

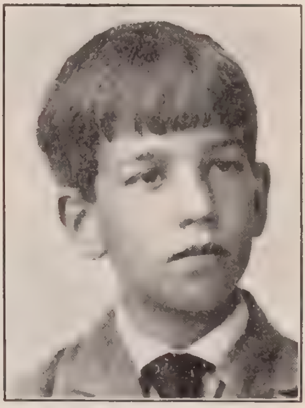
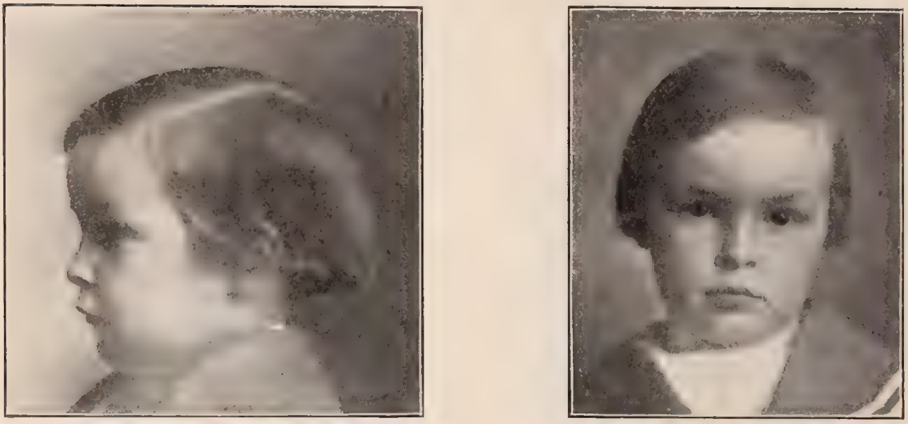


Fig. 7b.

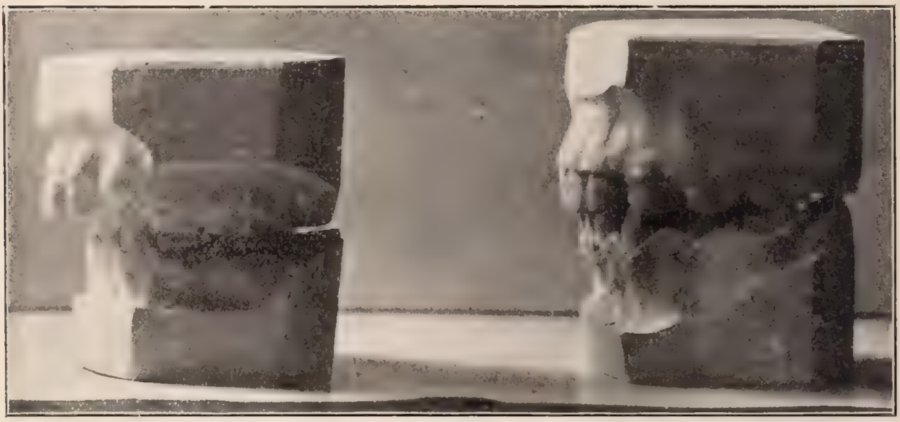
(*b*) Models of case before and after treatment. Result showing advantage of early diagnosis and treatment.

(*c*) Photo of complete case.

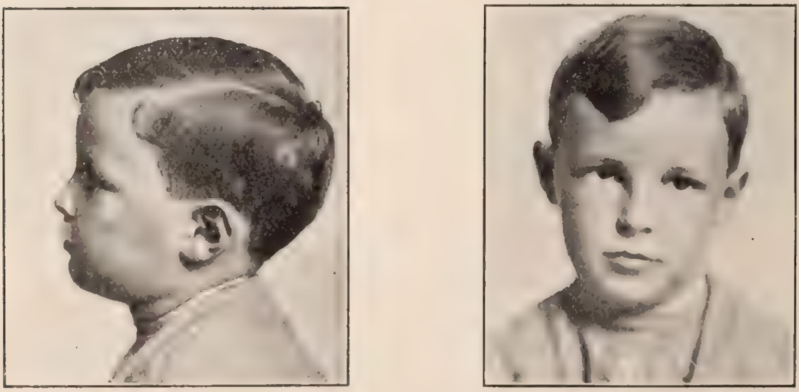
The preceding cases demonstrate without a doubt that habits of different forms produce powerful stimulations which interfere with the normal development of the facial bones and dental arches.



Figs. 10a.



Figs. 10b.



Figs. 10c.

It is not my intention to claim that habit alone caused the malocclusion in cases shown you, but the history in every case has proven that habit was the principal or primary cause.

Time will not permit of any discussion of the methods employed to correct habits in children. I wish merely to speak of the celluloid mitten for thumb and finger suckers, but the greatest success is obtained by properly educating the little patients, as a little instruction will generally cure habits even of long standing. Children who practice such habits are ignorant of the evil effects and when enlightened are very willing to discontinue them.

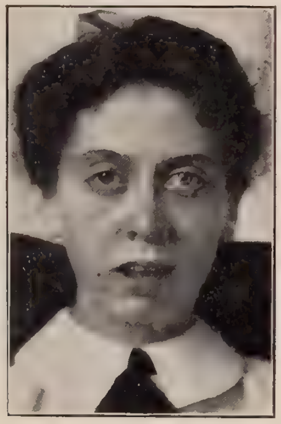


Fig. 8a.

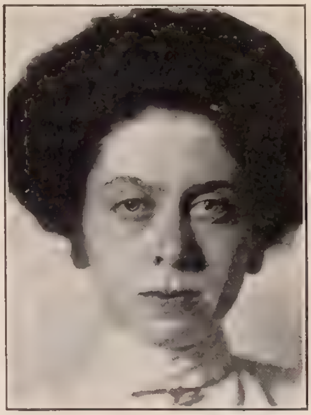


Fig. 8b.

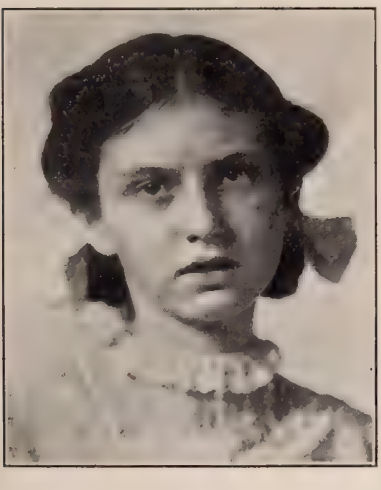


Fig. 9a.

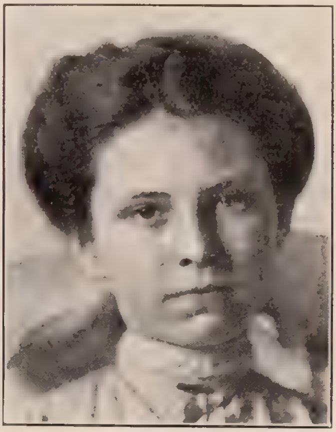


Fig. 9b.

Substitute stimulations may be of great benefit. As an example: Permit patient to chew gum excessively until desire to perform the original habit has subsided. This secondary habit (gum chewing) will be much easier for patient to discontinue than the primary.

DISCUSSION

Dr. M. A. Kendrick, Port Huron, Mich.: In presenting a paper of this kind to a body of dentists, where the majority are general practitioners, Dr. White has a well chosen subject.

He has not spent time in describing appliances, but has given the underlying principles of the successful handling of cases, caused by childhood habits.

Dr. White has brought out the great changes that take place in the dental arches and palate during the first seven years. We must know the normal development in order that we may apply the preventative measures. Unless we understand the normal development we will be unable to detect the abnormal.

Mal-occlusion always has a cause and the habits of childhood are responsible directly or indirectly for a great number of mal-opposed teeth.

Our success in treating these teeth will be in proportion to our knowledge of the stimulating influence that these habits have had on the teeth and the surrounding parts.

There are a few other causes of mal-occlusion of equal importance, but these habits of childhood are better understood and their effects are more apparent than the others. These and environment are the leading factors in mal-occlusion.

Because they are childhood habits people have not been giving them attention, thinking that the children would outgrow them and not realizing the bad effect that remains. But as Dr. White's paper points out, their importance is forced upon the profession.

Early interference means more than months of treating, if left until the occlusion is spoiled. Some of the surrounding parts will have grown too much, while others have been retarded.

As the stimulating influence of these habits is slight in the beginning, not much damage has been done; and an equally artificial stimulation will correct these wrongs and soon have the parts in a normal condition.

We should be on guard for mal-occlusion at all times, but at the fifth or sixth year, when the first molars are erupting, they need special attention, as these teeth seem to act as abutments for the alignment of the others. If they come in and take their proper places the others are likely to do so.

Lip and tongue biting and tongue sucking are exasperating habits to stop, when they are once well established and it will tax the parents' and dentists' patience and ingenuity to correct them.

The habit that has to be taken in all seriousness is mouth-breathing. This is not the fault of the child but growths. forming in the naso-pharnyx and throat, force them to get air in this way. Children can not be broken of this habit until these growths are removed.

Fortunately the newspapers and magazines are doing wonders in educating the public to the seriousness of adenoids, several articles having appeared the last year. In "Good Health", April number, Dr. J. T. Case says: "Mouth breathers waken in the morning with open dry mouths, foul smelling breath, persistent hoarseness, sometimes headaches, and a loss of appetite. The physical expression is characteristic and indicates mental listlessness. The nose becomes pinched and the root of the nose, between the eyes, flattened; the lips are thickened and the upper lip shortened, so that the upper front teeth show; the inner corner of the eyes being drawn down, the eyelids droop and give a long drawn appearance to the face. The upper jaw becomes deformed; the palate being high and arched, and the two sides of the jaw being too close together, the upper front teeth are pushed forward."

In continuing the article he shows, that if these are left until the child becomes an adult, the general health will be impaired so much so that the patient will be susceptible to many diseases.

A short time ago a dentist told me that he almost lost his child by the throat and nose being filled with these growths. In sleep these would drop into the throat shutting off the air, so that he had to be watched for fear of strangulation.

These growths have also a bad effect on the disposition and temperament. They cause deafness and difficulty in articulating, all of which renders him nervous and irritable.

We general practitioners can see the importance of doing something in these cases as soon as possible, not waiting until the patient is fourteen or fifteen years of age, when it will be too late. These stimulating influences will have caused too much growth in some of the bones, as in the protrusion of the lower jaw, and retarded them in others, so that the esthetic effect and normal occlusion can not be had.

Dr. White told us that the very worst cases of mal-occlusionn come from these habits. Too much stress can not be put on the importance of applying the preventative measures at a very early age.

THE APPLICATION OF PORCELAIN FACINGS AND CROWNS TO CROWN AND BRIDGE - WORK*

By Thomas E. Weeks, D. D. S., Philadelphia, Pa.
Professor of Clinical Dentistry, Philadelphia Dental College.

IN a consideration of this subject, the first fact that we must recognize is that porcelain adds nothing to the strength of the piece, but is used purely for cosmetic reasons, thus the principle is established that porcelain in connection with gold crowns and bridges is simply a *veneer* and presents an element of weakness rather than strength.

The surfaces which are visible to the eye are, the labial or buccal and occlusal.

For those cases where it is sufficient to conceal the gold on the labial or buccal surfaces alone, the manufacturers supply us with porcelain facings of two types, the first are known as "Long pin flatbacks" and have two straight platinum pins, 20 gauge, which are inserted in the body when it is packed into the mould and are baked into it in the process of firing. These depend entirely upon the pins for their attachment to the gold foundation. Fig. 1.

The other form, of which the Steele facings are typical, depend upon a longitudinal slot or mortise which engages an extension of the metallic base.

As these facings *slide* into position, the surface of the facing next to the metal must be perfectly plain or flat.

This form depends entirely upon the slot or mortise for attachment and the strength of the attachment is governed by the size, form and location of the slot.

The various modifications of this form which have been offered, all depend upon the dovetail principle for their attachment whether the mortise be in the facing or the metal.

Where both buccal and occlusal surfaces must present porcelain we have a more complex problem.

---

*Read before the Southern New Jersey Dental Association, November, 1909.

While the metal must be sufficiently strong to withstand the maximum strain, both in the span and the base of the crowns, the force is not delivered directly upon the metal but upon the porcelain which forms the occlusal surface of the crown or dummy; consequently it must have such form and sufficient bulk to enable it to withstand this force.

Porcelains of this class are really crowns in which more or less of the lingual surface is missing and are known as saddle-back and diatoric teeth or detached dowel crowns.

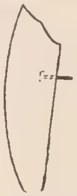


Fig. 1.—A facing before being ground.

Saddle-back teeth depend upon the platinum pins for their attachment to the metal.

Diatoric teeth and detached dowel crowns, depend for their attachment upon a countersink or hole in their base or gingival surface which engages a post or projection of the metal.

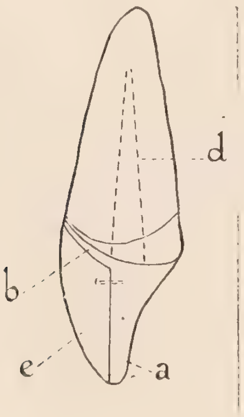


Fig. 2.—Completed crown on Incisor or Cuspid. (a) Metal portion formed of 22k. solder. (b) Space between cap and end of facing. (c) Band. (d) Dowel. (e) Facing, ground properly, all grinding on labial surface.

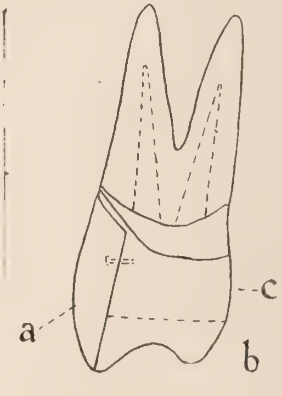


Fig. 3.—Porcelain-faced crown for Bicuspid. (a) Facing. (b) Swaged occlusal surface. (c) Solder. (b) and (c) also represent the molding when carved to represent contour.

The strength of all of these forms may be materially augmented by grinding the mesial, distal and lingual surfaces so that the metal may be extended upon these surfaces to the occlusal angle, forming a cup in which the porcelain may rest. This form, with the cement, used in attaching the porcelain to the metal, greatly augments the ability to resist stress.

Recognizing the principles which govern in the foregoing analysis, the conclusion is inevitable that when facings are used, the metal and not the porcelain must receive the stress. To insure this, the metal must project a trifle beyond the incisal edge of the porcelain and in incisor and cuspid dummies and crowns the incisal half of the metal must be of such a material and have such thickness that it will not bend or spring under the stresses to which it is subjected. Figs. 2 and 3.

A common method employed in the attempt to protect porcelain facings from stress is to grind the incisal edge of the facing flat, and allow the backing to extend over it, forming a tip of metal. Fig. 4.

In the writer's experience and observation the effectiveness of this method is questionable and does not offset the offense to the esthetic sense cf the observer.

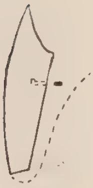
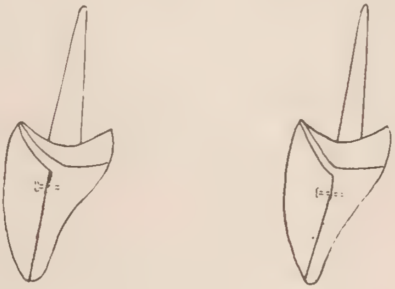


Fig. 4.—Incorrect when facing is to be soldered because of pressure produced by contraction of metal.



Figs. 5 and 6.—Two other methods of grinding facing.

A careful study of the plane of the incisal surfaces of facings ground in the usual way, and the inclines which they present to the lines in which stress is delivered will show that unless there be great bulk and strength of metal the safety of the porcelain is endangered rather than insured.

In the majority of cases where the incisors and cuspids are involved the thickness of the incisal half—labio-lingually—is limited.

Under these conditions it is usually necessary to grind the facing thinner than it is when it comes from the manufacturer, in order that the metal may have sufficient thickness to furnish the necessary protection to the facing.

Many operators hesitate to do this, probably with the idea that bulk of porcelain in the incisal half is necessary to give it strength. Here again the writer's experience does not sustain this idea.

Most of the long pin flat-back facings furnished today may be ground and polished so highly that it makes little difference whether the grinding be on the face or back of the porcelain.

This is decided by the form of the porcelain as it comes to us, and by the labial contour of the remaining natural teeth.

If it is ground on the labial surface, short curves, which give a "humpy" appearance, should be avoided, remembering that there is a harmony of lines as well as a harmony of color, and that long sweeping curves are more in harmony with the curves of the natural teeth. Fig. 5.

If the grinding is done on the back of the porcelain it should be so performed as to establish a plane from a point near the pins to the incisal edge. Fig. 6.

Having ground and modified the facing until it fulfils the esthetic requirements and obeys the principles enunciated, we come to the question of its attachment; is it to be waxed to the metal base and attached with solder in the operation of making the lingual contour, or is it to be detached from the base, the metal portion completed and the facing attached afterward with cement, riveting the pins in properly countersunk holes prepared in the metal backing for their reception?

In answering this question we must admit that where the metal backing is sufficiently thick to admit of a reasonable length of pin, and the operation is properly performed, facings attached with cement and riveted are seldom detached by the pins pulling out of the metal backing.

We are now in a position to consider the advantages and disadvantages of the two methods.

It is pretty generally recognized that no porcelain is absolutely perfect around the platinum pins and such imperfections as exist are increased when the facing is subjected to the heat necessary in soldering.

Furthermore, some porcelains change color when subjected to the operation of soldering.

Second, when facings are thin or translucent or both, the color of either gold or platinum gives an appearance which is unpleasant.

Third, all facings backed by metal have an opaque appearance which can frequently be very much improved by placing a cement of the proper shade between the porcelain and the metal.

Fourth, the joint between the porcelain and the metal can never be made so perfect that moisture cannot enter.

In reviewing the objections each one stands, *per contra*, as a reason in favor of attaching the facings in some other way than by soldering them.

In addition, there is the advantage of being able to replace a fractured facing with a minimum outlay of time and trouble.

In support of the position taken we have the testimony and experience of such men as Drs. W. H. Taggart, C. N. Johnson, and many others whose opinion is entitled to respect, as well as the findings of Dr. Clarence Grieves in the exhaustive experiments which he has reported.

In localities where a large assortment is accessible for selection, the Steele facing has become deservedly popular.

If used properly, as the manufacturers direct, most of the failures reported might have been avoided.

A careful study of these directions will reveal a perfect harmony with the principles which govern the use of facings which are attached by pins.

The manner of attachment precludes the possibility of grinding the back or tip of these facings, so the grinding must all be done on the labial surface.

It seems strange in view of the great success that has attended the use of the all-porcelain crown on the anterior teeth, that the metal crown, with its porcelain veneer, should retain the popularity it does.

In an experience covering twenty-five years in private and Infirmary practice, the percentage of failures has been much less with the all-porcelain than with the porcelain-faced crown.

It is true that the porcelain-faced crown is frequently necessary when the crown is to serve as an abutment for a bridge, but as a single crown there are very few cases where the all-porcelain crown will not manifest as much strength, besides being cleaner and presenting a more natural appearance.

These crowns were first made with the dowel baked into the body of the crown but it soon became apparent that such a crown possessed no advantages over one in which the dowel was fastened with cement.

The large number of manufacturers who are supplying this form of crown indicates its increasing popularity, and since the introduction of the casting process its possibilities have greatly broadened.

Many operators are now using these crowns for both crowns and dummies in bridge-work. Where the tooth to be supplied may be of sufficient length to give much bulk and consequent strength the prognosis is favorable.

Most of the failures in the use of porcelain come when the fact is ignored that there must be *bulk* of porcelain to give strength.

Further, that this bulk must be properly distributed under correct architectural principles. The conical or wedge form fulfils these laws to the greatest extent.

For this reason porcelain crowns of this type to supply the incisor and cuspid crowns have the greatest strength in proportion to their bulk and where the bite is not so close as to preclude a strong linguo-gingival ridge in which the dowel may be anchored without weakening the crown, this form of crown has all the strength necessary.

It is not the purpose of this paper to describe the technic of crown or bridge construction, only that part which has to do with the attachment of the porcelain and, that only where the metal is formed by the casting process.

We will assume that the root is properly filled and prepared for a crown, if a cap is to be used we will also assume that it is complete.

In the construction of crowns the work may be divided. *First,* the preparation of the root. *Second,* the making and fitting of the dowel. *Third,* the making of the cap, either with or without a band. (In the casting process, when no band is employed, that portion of the third step may be omitted.) *Fourth,* the preparation and attachment of the porcelain. It is this fourth step that will be considered.

If a detached dowel crown is to be used, an iridio-platinum wire, 14 or 16 gauge, of the proper length, is tapered and used as a core to assist in shaping the wax model and to strengthen the casting. The crown is then ground so that the labio-gingival angle will fit the gingival curvature of the root but at all other points will allow a sufficient thickness of wax between the root and the porcelain.

The wire is then covered with softened casting wax, forced into the canal and the crown forced into position while the wax is still soft. When it is chilled it is carved to form and polished.

Remove from the root, insert the sprue, then remove the crown, invest and cast.

If a band is employed the cap and projecting end of the dowel is covered with wax and the crown, which has been properly ground, is forced to place while the cap is in position on the root and the wax soft. Carve and proceed as before. If the case is one adapted to this form of crown and the technic has been carefully performed this will give us an ideal crown.

If the crown is to be of metal with a long-pin flat-back veneer the procedure up to the attachment of the facing is as already described.

While the wax is still soft the facing which has been properly ground, is forced to position, carved and polished. The facing is then carefully removed and graphite points of the proper size inserted in the holes left when the pins were withdrawn. Invest and cast as before.

When the metal is finished the facing is cemented to the backing and the pins riveted. If a Steele facing is used, the facing is ground and fitted, the backing adjusted and trimmed, when it is adjusted to the root or cap and the contour completed with casting wax.

While the casting process may be employed in the making of porcelain-faced crowns when a banded cap is employed there is no particular advantage over the soldering process.

In soldering, plate should be used to reinforce the incisal third to insure a sufficient thickness of metal at this point.

In the construction of dummies where porcelain veneers are used the technic is practically the same as noted.

There is, however, another form of dummy in which the metal and porcelain are combined. This form of porcelain is a diatoric tooth.

After a tooth of the proper size and shade has been selected, it is ground to the proper shape and the countersink ground out so the wall will be parallel, with a small barrel shaped carborundum point, No. 13.

The proximal and lingual surfaces are then ground until they are parallel. It is then coated with vaseline and casting wax moulded upon it until it will provide for the proper bulk and form of metal to form a cup having a projection in its center which will engage the countersink. After the sprue is attached the porcelain is removed and the metal casting made.

The habit of some operators of casting the several dummies of a span in one piece, or casting the metal work of the whole bridge in one piece is not looked upon with favor by the writer. His opinion is founded upon the belief based upon some experience, that a cast span does not have the same strength as one in which the individual crowns and dummies are united with solder.

There are some cases where the lower bicuspids or molars are missing where a so-called sanitary or bar-bridge is indicated.

In such cases the saddle-back teeth may be used to advantage.

When they are used they should be so ground and the metal so formed that the porcelain will rest in a cup. This gives the greatest support and permits the use of much thinner porcelains.

The field is a broad one and the developments of the past few years have enlarged our vision still more.

If the illustrations shown here tonight and this somewhat disjointed effort will assist any one in their effort to master the principles which underlie this branch of our work the writer's object will have been attained.

LUDWIG'S ANGINA

By Fred Fletcher, M. D., Columbus, Ohio, Surgeon to Grant Hospital

IN a symptomatic way we have added only the differential blood picture to the classic description given this malady by Ludwig, of Stuttgart, in the year 1836. However, we now have an intelligent conception of the bacteriological aspect of the trouble, and we are indebted to recent investigators (Thomas, Gibson, Poulsen and others) for our present satisfactory understanding of the anatomico-pathologic character of the lesion.

Definition: Ludwig's angina is a pyogenic infection of the deep cellular structures of the submaxillary region, which terminates, usually, in suppuration or a gangrenous inflammation of the connective tissue planes of the upper part of the neck; the salivary gland, the muscles and the mucous membrane of the floor of the mouth. The local symptoms suggest a deep-seated abscess. In the advanced cases the constitutional manifestations are those of a profound septicemia.

Etiology: Ludwig's angina is strictly bacterial in origin, yet we hold no specific bacterium accountable for the symptom-complex. The streptococcus is the organism most constantly present in the pus from the discharging areas, and, in the mixed infections, the staphylococcus, pneumococcus, bacillus coli communis and the bacillus of malignant edema have been demonstrated. Epidemics of Ludwig's angina have been reported.

The disease attacks males more frequently than females. No age is exempt, although the affection is far more common between the years of sixteen and thirty—a time suggested as the age of carious teeth. We have on record typical cases of the disease in the extremes of life.

In only a small percentage of the cases are we unable to demonstrate the primary focus of entrance of the infection. There is always a history of neglect in oral hygiene, and in the examination of the oral cavity we invariably discover a carious tooth; a buccal ulcer; a mild form of tonsilitis; a simple abrasion of the mucous membrane; an erupting third molar; alveolar necrosis or a *peridental* abscess. And it should be borne in mind that Ludwig's angina not infrequently follows trauma in the form of molar extraction, fractures of the inferior maxilla; stab and gunshot wounds of the submaxillary triangle.

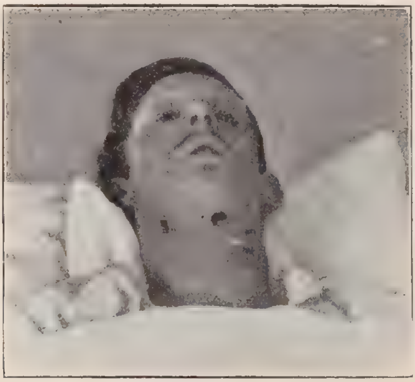


Fig. 1.—Showing swellings of the right cheek, submaxillary and submental regions.—Price.

My own experience in dealing with cases of Ludwig's angina has convinced me that an impaired state of health is a contributory factor only in the respect that it encourages neglect of oral hygiene, and, as a sequence, an infection because of the mucous, peridental and alveolar lesions.

Pathology: It is well to point out that every case of cellulitis localized in the submaxillary triangle is not Ludwig's angina. The cervical cellular tissue is essentially the seat of the inflammatory infiltration. Any submaxillary suppuration becomes a true form of Ludwig's angina just the minute it infiltrates the floor of the mouth and the pharynx.

Pathologically the lesion is peculiar in that the suppurative process does not invade the lymph structures. The connective tissue planes and muscle fibers are involved.—*Coplin.*

Thomas (Annals of Surgery, 1908), has contributed (illustrated article) to our knowledge of the anatomy concerned in the pathology of Ludwig's angina. He has demonstrated a continuity of cellular tissue from the submaxillary gland to the sublingual gland and the pharynx. He points out the limited space confined within the arch of the lower jaw; the close proximity of the submaxillary gland to the larynx; the peculiar anatomic arrangement of the muscles; the resistance offered the swelling by the bony landmarks and "confined" infiltrated structures, and how submaxillary infections reach the pharynx along the intermuscular fascia and obstruct breathing even before the larynx is involved.

Diagnosis: In the usual case of Ludwig's angina the symptom-complex develops insidiously, and the local pathology continues mild for a period of days without causing more than local (inflammatory) distress. We do not often encounter the "explosive" form of the disease—the type in which, because of the virulency of the infection and rapid development of the symptoms, the patient's life is jeopardized within the first twelve to twenty-four hours of the illness.

The history is one of a previous "jaw" ache, and later the development of a small swelling in the submaxillary triangle. The "lump" is painful on pressure, yet severe pain is not complained of until the swelling has attained a size sufficient to cause a sensation of submaxillary fullness. As the suppurative process advances the local symptoms become prominent; the pain is of a throbbing character; the entire neck swells, and the rapid pulse and irregular temperature shows that the system is being insulted by the absorption of toxins.

The symptoms of a well advanced case of Ludwig's angina are striking. The patient sits upright with the head resting in a position giving the greatest amount of cervical extension. The victim looks sick; the facial expression is one of anxiety, and he complains of an impending sensation of suffocation. On examining the neck we find an extensive submaxillary swelling; the entire cervical region of the affected side is edematous and brawny; the patient is unable to open the jaws; speech is difficult and indistinct, and a foul smelling saliva dribbles from the mouth. The tongue is swollen, and, because of the edema in the floor of the mouth, is pushed up against the hard palate. The tongue does not protrude. The "fixed" jaws make it impossible to examine the interior of the mouth or the pharynx. The floor of the mouth is edematous and has a peculiar doughy feel. The very appearance of the bulging, edematous structures in the floor of the mouth convinces one that the sublingual tissues are infiltrated and tense. The patient swallows even liquids with difficulty. There are frequent paroxysms of coughing, which excite dyspnœa; the patient is restless, and the cyanosis and "air" hunger are in keeping with the edematous involvement of the larynx and epiglottis.

Differential Diagnosis: The acute infective forms of submaxillary cellulitis are occasionally diagnosed Ludwig's angina. However, in the simple infections the floor of the mouth is not infiltrated—there is no bulging. Several years ago I pointed out what I believe to be an important differential symptom; namely, that in the ordinary submaxillary infections we get an early edema (swelling) of the mucous membrane between the cheek and lower alveolar arch. This part of the mouth is not involved in a true form of Ludwig's angina.

Prognosis: The mortality from Ludwig's angina is conservatively estimated at 50 per cent. The dangers are (1) an invasion of the respiratory tract and, (2) an overwhelming toxemia. Sudden death is not uncommon in patients seemingly in "good" condition, who develop an acute edema of the glottis.

In Ludwig's angina the outcome of the case depends very largely upon the promptness with which the infection is recognized and the thoroughness of surgical treatment. In this as in other acute surgical conditions, an operation of a few minutes' duration should not be expected to undo what it has required days of respiratory embarrassment and sepsis to accomplish. Prompt surgical treatment will reduce the mortality to less than 15 per cent.

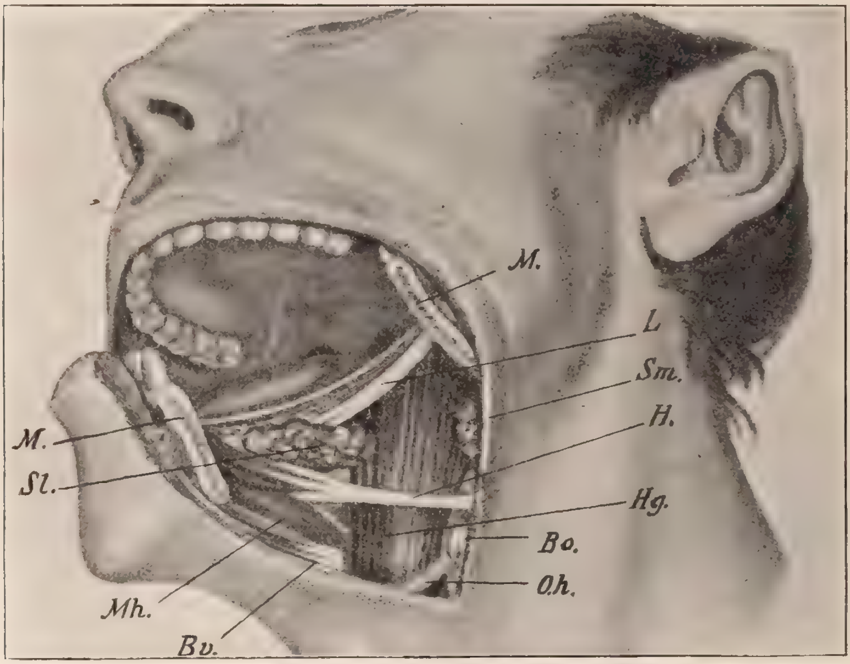


Fig. 2.—M, sawed surface of ramus. Sl, sublingual gland. Mh, mylo-hyoid muscle. Bv, digastric muscle. H, hypoglassal nerve. L, lingual nerve. Hg, hypoglossus muscle.

Treatment: A majority of the cases of Ludwig's angina occur in a class of individuals in which oral hygiene is unknown. In the better walks of life it is possible to institute prophylactic measures—the use of antiseptic mouth lotions; the local treatment of ulcerative lesions, and operative attention to carious teeth, bone lesions, etc.

There is no medical treatment for Ludwig's angina. It is almost criminal to procrastinate in the trying of expectant measures. The treatment that offers the patient the only chance of a prompt recovery is "the antiphlogistic touch of the therapeutic knife."

The surgical treatment is summed up in the one word "drainage."

An incision of medium length should be made over the most prominent part of the submaxillary swelling, and the "triangle" widely opened by a blunt dissection with the finger. A second incision should be made from the chin (sublingual incision) toward the hyoid bone. It is possible to connect the two cuts by means of the (deep) blunt dissection. It is occasionally necessary to cut the anterior belly of the digastric or to sever the mylohyoid muscle.

The secret of operative intervention is the opening up of the areas of infection—the pus pockets. Drainage is best maintained by the introduction of small, perforated, rubber tubes. It is a dangerous practise to swab out the already infiltrated structures with pure carbolic acid—or any other irritant. In conjunction with the two incisions into the neck, a free cut along the side of the tongue into the floor of the mouth is occasionally indicated. If life is threatened from an acute edema of the glottis, a tracheotomy should be made.

Post-operative care: The post-operative attention is of great importance. The case should be watched for the development of an acute edema of the glottis. Stimulation is necessary. When the oral edema subsides and it is possible for the patient to open the jaws and swallow (without exciting dyspnœa), the frequent flushing of the mouth with a hot antiseptic solution will add materially to the patient's comfort; control the offensive discharge and reduce the swelling. It becomes possible to feed the patient at this time. Hot antiseptic fomentations to the neck should always be used.

Convalescence: The thing that most impressed me in a personal way, in dealing with my own cases of Ludwig's angina, was the prompt convalescence which followed satisfactory drainage of the suppurative areas. Patients desperately sick at the time of operation were comparatively well in less than ten days. It is during the period of convalescence that the surgeon should refer the case to the dental surgeon for treatment.

Anesthesia: The subject of anesthesia is an important one. Nitrous oxide is the least irritating of the general anesthetics. Ether adds entirely too much irritation to the already inflamed larynx. In my own work I have used chloroform, because I did not think it possible in any of the cases to satisfactorily cocainize the acutely inflamed cervical structures to the extent that my operative work would be thorough.

Report of Case: It has been my privilege to examine eight individuals (all males) suffering from true Ludwig's angina. Four of the cases were operated upon by me and recovered.

The following case was seen in consultation with Dr. A. G. Helmick, chief physician to the Ohio penitentiary, December 6, 1908, and is reported as classic of the more severe forms of the disease:

Male, aged 36; fine physique; always healthy, was admitted to the hospital ward December 4, complaining of a "sore" neck.

Previous History: The molars in the left lower jaw had been carious and troublesome for several years. Had always neglected oral hygiene. Ten days ago patient had a severe toothache which lasted for more than twenty-four hours.

Present Trouble: Eight days before entering the hospital the man noticed a small, painful swelling under the left jaw. His carious teeth and ulcerated gums caused him pain. The submaxillary ''lump'' caused no special difficulty, yet it grew gradually in size and became daily more painful. At the end of a week the entire left side of the neck was swelled; the cervical muscles were sore; the tongue seemed thicker than normal, and he had some trouble in opening his mouth. When I examined the patient he presented the following symptom-complex: He was sitting upright in bed; he looked sick; the facies were anxious; he was restless and complained of great difficulty in breathing. He had had a chill the night before. Speech was indistinct; the breath was offensive and large quantities of muco-saliva dribbled from the mouth. Owing to his pain and an impending danger of suffocation, he had not slept for a period of forty-eight hours. He was unable to swallow, and every attempt excited a paroxysm of dyspnœa. The temperature was 103 degrees; the pulse 120.

The submaxillary and cervical swelling was marked; the entire neck was infiltrated, edematous and brawny. The floor of the mouth was on a level with the teeth, was tense and bulging. The tongue was thick and filled the entire oral cavity. The jaws were ''fixed,'' and for this reason it was impossible to examine the interior of the mouth. There was no edema of the mucous membrane between the cheek and the alveolar arch, so it was possible to retract the cheek and palpate the carious molars with a gloved finger.

Blood Examination: Dr. H. O. Bratton, of the Grant Hospital, made the following report: Index 95, Leucocyte count 31,200. The differential count was—polynuclear corpuscles 85 per cent.; small lymphocytes 9 per cent.; large lymphocytes 6 per cent.; the eosinophiles were absent.

Treatment: Chloroform was administered (the anesthetic was troublesome) and an incision of medium length was made into the tense tissues of the submaxillary triangle. A blunt dissection of the submaxillary space was made with great difficulty, owing to the inflammatory infiltration, and it was necessary to sever the mylohyoid muscle. No frank pus was encountered, although a small amount of foul smelling, blood tinged serum was evacuated. A second incision was made under the chin and the sublingual structures bluntly dissected. No pus was encountered. The two cuts were connected, and the neck drained by introducing a small, perforated rubber tube. The mucous membrane in the floor of the mouth was not incised. The operation consumed 15 minutes.

Post-operative Course: The patient reacted promptly; said that he breathed easier, and that the throbbing pain was less acute. However, he had several paroxysms of dyspnœa that were alarming in the first few hours after the anesthetic. The dressings were changed twice during the night, and were well saturated with a thin, foul smelling ichorous pus. I examined the patient twelve hours after the operation, and was not pleased with his physical condition, nor with the quantity and character of the drainage. The breathing was greatly embarrassed; paroxysms of dyspnœa were frequent, and the patient was cyanotic. We decided to make a traechotomy that afternoon, but at 12 o'clock (when his condition was apparently no worse) he developed an acute edema of the glottis that demanded urgent emergency surgery. Dr. H. R. Garrett, who was on duty in the ward at the time, saved the man's life by plunging a knife between the lower tracheal rings and inserting into the trachea a No. 12 rubber catheter. The improvement in the patient's physical condition was marked—after he commenced to breathe. The catheter was fixed in situ by means of adhesive straps run around the neck. One hour later the cyanosis had disappeared and the patient was able to sleep for the first time in three days.

The following morning there was an escape of a large quantity of unusually offensive pus from the mouth. The patient said that it felt like "something had let loose deep in the throat." This discharge of pus relieved his acute suffering. The amount of pus discharged through the mouth for the next few days was surprising. Twenty-four hours later it was deemed safe to remove the catheter, for the patient was not only physically better, but he breathed well and had very much less sublingual edema. The oral rupture of the abscess was to the inner side of the last left molar.

December 10th I made an incision to the left of the median line of the neck and evacuated a pocket of pus. There was considerable sloughing of the submaxillary cut. From this date the patient's convalescence was prompt; the infiltration and edema of the submaxillary region and neck disappeared; the temperature reached the normal; he could eat, and was discharged from the hospital ward December 19th.

Bacteriology: The streptococci and staphylococci (mixed infection) were demonstrated from the pus taken from the original incisions and from the abscess that ruptured into the oral cavity.

OUR successors will be a fairer and a happier race than we are. I believe in progress; I believe that happiness is the goal of humanity; and I cherish a higher idea of the Divine Being than those pious folks who suppose that man was created only to suffer.—*Heinrich Heine.*

A JACKETED BRIDGE DUMMY*

By James B. Lester, D. D. S., Christiansburg, Va.

IN this paper I will endeavor to describe a bridge dummy, for the bicuspids and molars, that has been in use for eight or ten years and given entire satisfaction.

My father, Dr. D. D. Lester, used it in practice for some time, and then wrote an article which appeared in the February number of *Items of Interest,* 1903, also copied in *Digest* of some months later.

I have examined these bridges after seven and eight years of use, to find them in perfect condition.

The special feature of the dummy is that a plate tooth with gold jacket is used. To illustrate, I will describe the making of a bridge for the replacement of a missing first molar:

The second bicuspid and second molar are prepared and gold cap crowns made for them. An impression and bite are taken and model mounted on an articulator.

A plate tooth is now selected that is of proper size, shape and color to fit the space between the crowns; this is ground so there is sufficient space, approximately, to allow for the thickness of a number twenty-eight or thirty gauge gold plate. The portion of the tooth that will be next to the gum is shaped to your individual taste. I generally prefer to have it rest on the buccal side of ridge and slope away from the ridge on the lingual side.

To make a jacket for the dummy tooth, select a piece of gold plate (twenty-eight or thirty gauge) and bend around the tooth to ascertain the correct length, making it a little large to allow for proper adjustment and contouring. Cut the band by this and solder (with twenty-two karat solder).

We now have a band the size of the tooth. The tooth is then pushed into the band, and the length and slope of the cervical end is marked on the inside of the band. The band is then trimmed to the required length, and the cervical end on the buccal side will probably need contouring in order to make it fit the tooth. The tooth is again placed in the band to be sure to have it properly shaped.

A bottom is now soldered in the band. Here I will say the cervical end of the band should have been so shaped that this bottom will present a nearly plane surface, not concave, to facilitate in cleanliness.

The porcelain tooth is again adjusted to this jacket. The gold is trimmed level with the tooth on the lingual and approximal sides, while the buccal, and especially mesio-buccal, can, for esthetic reasons, be trimmed away exposing the porcelain to a point quite near the cervix.

The jacket is now almost complete and presents the appearance of Fig. 1.

The jacket is then stiffened inside along the "linguo-cervical" portion (at point "A," Fig. 1) with solder.

---

*Read before the Louisiana State Dental Society, 1909.

The dummy, presenting the appearance of Fig. 2, is placed in position and articulated. After waxing it in this position, a small amount of investing material is run around the cervical end to hold it in place. The porcelain tooth is removed and the jacket is soldered to the crowns.

Now, after polishing the bridge, the interior of the jacket should be roughed with a cross-cut fissure bur and the portion of tooth that will be covered by jacket should be roughed with a carborundum disk to facilitate the process of adhesion of the cement, which is now used to set the tooth.

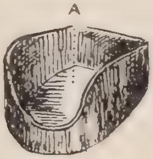


Fig. 1.

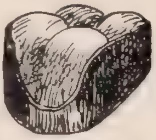


Fig. 2.

By this method you have a dummy of which the most visible portion is porcelain. The porcelain not having been subjected to heat, is not liable to break, but if it should, could be easily replaced by selecting a tooth of proper size, which, with a little grinding, can be adjusted and cemented in place. By this method we have overcome to a great degree the unpleasant sensation of chewing on gold. The bridge is quickly and easily made.

In the illustration accompanying articles in *Items* and *Digest* the gold did not come quite to the occlusal surface lingually and approximally, which was found to be a weakness. After correcting that defect the tooth has proved quite satisfactory in my own and my father's practice, for several years.

PROFESSIONAL LIFE FROM A BUSINESS STANDPOINT*

By Lee S. Smith, Pittsburg, Pa.

ONE of the most interesting studies for those who use their thinking power is that of starting in life, and one's seeking to pilot his little individual craft into the proper channel to insure success in life. When as a boy I heard of commencement exercises as concluding the college education of young people, I thought it rather a paradox to call the ending commencement. But when we consider life and its necessary struggle for an existence, and the fact that upon reaching manhood each little atom of humanity is supposed and expected to take up the burden of life and carve out a future for himself, we realize that the close of our school education is in reality the commencement of one's actual individual life. In other words the foundation has been laid, and each one is supposed to erect thereon his future.

If this is true of our regular scholastic education, how much more so is it with reference to that special education intended to prepare and fit us for our selected profession or calling. In the earlier days of our profession

---

*Read before the Odontological Society of Western Pa., October, 1909.

(and not so long ago either), there were no dental laws and but few colleges, and a college-bred dentist was an exception. Any one being the possessor of a turn-key and a few drills, excavators and pluggers could hang out his shingle and call himself a dentist. In those days the aspiring youth had no college examinations to look forward to with dread, and even after it became the proper thing to do to go to college, he did not have to lie awake nights thinking how he could manage to satisfy an inquisitional examining board that he possessed the proper knowledge and qualifications to make him a worthy member of the profession.

One of the interesting studies of those aspiring to all the rights and privileges belonging to those entitled to use the D. D. S. after their names has been to observe how much more the embryotic dentist, after one year in college, knows than do those who have been in practice for years. In fact, as a rule they imagine that they know more the first year, and perhaps continue to increase in conceit regarding their knowledge up to time of graduation, and often do not have the bubble of conceit punctured until they get into actual practice and come up against the real difficulties involved in making a practical application of the theoretical knowledge acquired. It is then and then only that he realizes that there is a serious difference between being told how to do certain things and the actual doing of them without the assistance or judgment of an older and more experienced head to guide the hand.

But enough of this preparation for the consideration of our subject—Professional Life From a Business Standpoint.

Our young man has graduated and has passed through the hands of the examining board, and has been accorded the lawful and legal right to scratch gravel and to either succeed or fail in the battle for a living and as much more as he can secure. It is no light problem that confronts the beginner in any of the professions (or, for that matter, of any other calling) in this hurrying, pushing age, and if anyone hangs out his shingle with the idea that those needing dental work done are going to tumble over themselves to make appointments and secure his services he will soon come back to earth and find that he must of necessity spend many lonesome idle hours watching and waiting. That there is always room at the top is as true an adage today as when it was written.

Some one has said that the fact that it is true is poor satisfaction to the poor devil at the bottom. Well, that is true also, but if he is possessed of a true manly spirit it should prompt him to leave there and seek the top. I do not mean to say that there may not be circumstances and conditions that may prevent some from reaching the top, but

'Tis better to strive and fail
Than never strive at all.

Some tell us that all professions are overcrowded, and so they are, as well also are all the walks of life, if we count slush instead of brains, brawn instead of muscle, but I say to you that there is just as great a demand today in all the walks of life for good men as there ever was. The main trouble is that there are so few who seek to make their services necessary, so few who do what they have to do the best that it can be done, so many who work by the clock, or who are satisfied to have their work good enough.

Why is it that some boys entering the mercantile or manufacturing world rise to position of partners and proprietors while so many others remain in minor positions? It is simply because they make themselves so essential and necessary to the success of their chosen calling that those in authority think they cannot get along without them.

What has all this to do with the business success of the dental profession? Why, only this. We are all the servants of those whom we serve, and the dentist who desires to succeed must make his patients feel that he is as good as if not the best dentist in existence, and to this end he should devote his every energy, first by knowing how to do the best work and then by doing it.

If he is imbued with this idea he will not be content with his knowledge obtained while at college, but will realize that that was only his commencement and will, by coming in contact with his fellow practitioners in dental societies and otherwise, by comparing notes and learning by their experience, keep himself at the top and insure his ability to give the best service possible.

One good patient secured furnishes the best ethical advertising medium that it is possible to attain.

Do not imagine for a moment that I think it possible to satisfy and please all of those who apply for your services, for none of us are perfect, but it is far more so than some of you may think.

I was talking to one of our most important citizens when he told me about his dentist making him a very expensive piece of work that would not fit, and who refused to try to remedy the trouble. So he changed to another dentist who made it work right and secured the man, his family and his influence.

To the young dentist, especially, I would say, when you secure a patient satisfy him if it is at all possible, no matter at what cost, or whether you make or lose on his work, at the same time always remembering that unless you appreciate your own work by charging a proper fee for it you must not expect others to properly appreciate it.

There is one other, and a very important side of the professional life as considered from a business standpoint, and that is the commercial or financial management side. The dentist should gain a reputation for promptness in this direction. First, by making his word as good as his bond. Character building is as important in a professional man's life as in that of any other. Keep your accounts on a business basis. Render your bills regularly and promptly, and give your patients to understand that you have regular terms of payment. You may offend some, but in the long run you will be the gainer. In other words, a dentist, to be successful, must be a surgeon, an artist, a sculptor, a mechanic and a business man as well. He must have the same mental grasp of the laws of physics, chemistry and biology as is needed to be a physician; he must have the same instruments to manipulate his skill as that required by the surgeon. He must be able to take advantage of the finest requirements of the mechanic and have the ability to carry out these mechanical operations on living tissue in such manner as to cause the least irritation thereby. His workshop is a hole in the face of about two inches in diameter, and in that hole he has to perform all of his operations, and the patient takes the work home with him.

In nine-tenths of the work done by the physician or surgeon, nature is expected to complete what they leave undone, but the dentist has to do his work. His failures stand out where he can always see them. The doctor buries his.

There is another thing to which I want to call your attention. The man in a dentist's care is usually in a bad humor. He does not go to the dentist until he has to, as a rule, and as soon as he gets there he begins to fuss about countless other things he would rather be doing; as a result he gets peevish and will not sit still. The dentist has to show consideration. He must be tolerant. He has to do all the smiling both for his patient and for himself. His best efforts are seldom appreciated. He is commonly regarded as a disagreeable necessity. His task is a thankless one, and because, as a rule, he is square and honest and charges by the hour or by the operation, he does not make as much money as he ought to make. The surgeon can put on a bluff. He can make a mountain out of a mole hill and charge the price for removing a tumor when he takes out a wart, and the patient will never be the wiser. The most the physician has to do is to look wise and let Nature take her course. Nature has precious little to do with the restoration of teeth in the human mouth.

When I say a dentist has to be an artist I mean he must have the knowledge of color, which enables him to properly match missing teeth with those remaining as well as to properly form contours in his operations in the mouth. When I say he must be a sculptor, I mean he must have knowledge of symmetry which will enable him to restore contours either in gold or silver or cement. The argument I have advanced as to why he must be a first-class skilled mechanic is explained above, as are also the other points raised.

Another point on this subject that may interest you is the fact that from the best information we have, we do not believe that more than four per cent. of the population of this great country of ours regularly patronize the dentist. Of course, this excludes the man who patronizes him only to the extent of having a tooth extracted when it hurts him. I do not believe that more than four per cent. of our people go to him regularly to have their teeth examined and ascertain whether they need any dental work.

There is still another thing that may interest you. There are no exact figures at command, but it is estimated, roughly speaking, that the dentists of the United States consume annually from seven to eight million dollars' worth of pure gold. By that I mean that they hammer that much gold into the mouths of their patients or else put it there in the shape of gold crowns and bridge work. It is rather startling to think that there is this much pure gold each and every year being absolutely wiped out of existence, which regularly finds its way into the graveyard. Gold that is turned into jewelry or money or is hidden away, sooner or later most of it will find its way back into circulation, but when it is consumed by the dental profession, it absolutely disappears forever and always.

If you are inclined to think that seven or eight millions dollars is an excessive amount, I would say that it is estimated that there are 40,000 dentists in this country and $20.00 worth of gold for each of them I should regard as an extremely conservative estimate of what they will use.

But in conclusion let me say this, that the conduct of your business in a business-like manner, recognizing the brotherhood of man, and with an honest intention on your part to live straightforward lives and to give your patients the best that is in you, will not only reward you in a financial way, but will also reward you in the satisfaction it gives you that in your life work you have done well. The greatest monument that can be erected to a man is that erected in the hearts of his fellow beings, so that when his time comes to pass out he will be actually missed, there will be tears shed for him and his dropping from the ranks will leave a place long after he has gone. In other words, his fellows will say of him, "He was a man" in all that expression means.

THE TREATMENT OF PULPLESS TEETH *

By Oscar J. Ory, D. D. S., Garyville, La.

While I have nothing original to offer you, still what I will give you is good because it comes from a good man, viz: Dr. Buckley, of Chicago. The subject of my paper is really the treatment of putrescent pulps that are not causing any suffering, because I will confine my remarks only to that phase of pulpless teeth. You are perhaps all familiar with the method I am to give you, but if my paper be the means of only one practitioner taking up the method, I will consider myself well paid for the presentation.

When decomposition of a pulp takes place, ptomaines are produced and also carbon dioxid gas, ammonia gas and hydrogen sulphid gas. It has been found that formaldehyde in 40% solution known as formalin, when sealed in a tooth having a putrescent pulp, acts upon these gases and renders them harmless.

Many claim we have fats to contend with also when treating putrescent pulps. Materia medica tells us that lysol is a good antiseptic and it is produced when fats are acted upon by cresols, so to get excellent results use formalin and cresol, equal parts.

---

*Read before the Louisiana State Dental Society, 1909.

The method of procedure is as follows: First apply rubber dam and sterilize cavity with a 10% solution of formaldehyde. Then thoroughly open up pulp chamber and root canals, being careful not to use any pressure in doing so, as that would force some of the septic material through the apical foramen and start trouble that you have perhaps all had some experience with. Then seal in the cresol and formalin mixture on a pledget of cotton with cement and dismiss the patient for a few days. At the next sitting you may remove some of the contents of the canals but not attempting to remove all at this sitting. Repeat the treatment and dismiss the patient for a week or ten days when you will be able to thoroughly clean the canals, wash with alcohol and dry out with warm air and then fill.

PYORRHEA ALVEOLARIS—SOME IMPORTANT CONSIDERATIONS FOR GENERAL PRACTITIONERS

By Elgin MaWhinney, D. D. S., Chicago, Ill.

(*Concluded from page* 10 *January Summary.*)

In treatment of pyorrhea alveolaris both normal occlusion and normal interproximal contacts are important points to be considered in every case. The question is often asked, can anything be done to restore the interproximal gum tissue when once lost? to which answer must be in the negative. All operations that have been suggested for the restoration of this tissue have been proven a failure in my hands. Loose gum tissue unsupported by fibrous attachment to alveolar process and the tooth neck invites disease.

To thoroughly clean and polish teeth—"that's the rub." It is the rock on which the ship of hope of many dentists dashes to pieces. Many there be that attempt to clean teeth, but few there be that accomplish it. This is the most difficult of all operations in the mouth, requiring a "delicacy of touch" and finger perception as does no other dental operation.

I cannot tell you how to clean and polish a set of teeth. Long practice and eternal vigilance are the only teachers.

The cure for pyorrhea alveolaris is in your finger perception plus suitable instruments and materials. Without these you will certainly fail; but because you fail don't conclude that the case is incurable, for in nearly every case where I have extracted teeth affected with pyorrhea trouble because I could not bring about a cure, I found some deposit I failed to remove or some roughened surface I failed to smooth or polish. In addition to thorough cleansing and polishing- where large pockets are present, such pockets should be thoroughly curetted and irrigated. All fungus growths should be removed and blood-letting will greatly aid where serious hypertrophy exists.

In using the lancet care should be exercised not to divide the gum margin, as serious recession will result. All sources of irritation should be removed. It is useless to expect a permanent cure where there are ill-fitting crown bands or joints, lost contacts between teeth, overhanging fillings, irregular occlusion or other unnatural, inharmonious conditions present. These conditions should be corrected at the outset of treatment. Many cases of pyorrhea trouble are curable by restoring the harmonious normal physical relations of the teeth alone, because in so doing the cause is removed.

All operations, whether for fillings, inlays, crowns, bridges, bands, clasps or plates, should be made so as to preserve the normal relations of all the remaining teeth and especially the interproximal gum tissues. Attention is called to this fact here because so many cases of gingival trouble result from carelessness in this regard.

It is surprising the number of pyorrhea cases that I see where the cause lies in faulty contact of the teeth, both where fillings or crowns failed to restore the normal contact points, as well as those cases where contact is lost by slight slow decay and mechanical abrasion, permitting food to crowd in upon the interproximal gum septum.

I know of no pharmaceutical preparation that is a cure-all or panacea for pyorrhea troubles. The dental profession seems to be looking to materia medica for a sure remedy for pyorrhea alveolaris. It will look in vain, for such a remedy cannot be manufactured. Behold, the cure-all is at hand! It lies in your finger touch and perception. Materia medica can only aid your finger work.

Among the pharmaceutical agents that have proven valuable are cocain hydrochlorate and its analogues to desensitize and render less painful instrumentation; phenol sulphonic acid, to soften deposits, control suppuration and slough necrotic tissue; zinc chloride, to slough necrotic tissue, obtund sensitive tooth necks and constringe gum tissue; zinc sulphcarbolate, as astringent antiseptic alterative tonic; zinc iodide, as astringent; lactic acid as alterative cleansing antiseptic stimulant; trichloracetic acid as obtundant escharotic astringent; resorcin, stimulant, irritant; Black's 1, 2, 3, stimulant to gum tissue; tinct. iodine, alterative germicide; glycerol iodine and zinc (Talbot) as penetrating germicide, alterative astringent.

My usual method of applying remedies for average case is: First, use combination of lactic and phenol sulphonic acid for two treatments to soften deposits, relieve sensitiveness of gum tissue and check pus formation before scaling, and one treatment after scaling. If pus has disappeared on first visit after scaling and polishing is completed, I know the teeth are clean—otherwise not.

I use zinc sulpho-carbolate solution to wash pockets at each sitting. Careful massage will aid to re-establish normal circulation; supplement by suitable mouth washes. My usual standby for final treatments is glyceral iodine and zinc (Talbot), applying it every other day for a time (according to conditions), and gradually reducing the number of weekly treatments as improvement is manifest, requiring, as a rule, three to four months before dismissing the case. No set rule for all cases can be made—each case is a law unto itself.

Teeth that have lost so much peridental attachment and alveolar socket as to make recovery impossible, should be removed at once. Loose teeth must be held firm by ligating, splinting or other means until recovery is complete.

Systemic treatment should be directed to correcting faulty assimilation and elimination—which can usually be accomplished by cutting down meat and sugar diet—encouraging the eating of cereals, fruits, vegetables, etc., and the drinking of at least eight glasses of wholesome water (aside from what is taken at meal times), every 24 hours. Open air exercise insisted upon. Personal experience leads me to strongly recommend that obscure, stubborn cases, especially those of phagedenic variety, are most successfully handled in conjunction with the family physician. Mouths once affected with pyorrhea alveolaris are liable to have it again from the same or other causes, but patients who have once been relieved and properly instructed have learned to go frequently to their dentists for examination and prophylactic treatment and thereby avoid future attacks. In fact, the more intelligent are consulting their dentists at regular intervals, realizing that "an ounce of prevention is worth a pound of cure," and very much more satisfactory.

DISCUSSION

Dr. J. Q. Byram, Indianapolis, Ind.: If my brother Dr. Cook refuses to discuss this paper, I feel it is a case where the "angels fear to tread."

It would expose my ignorance if I should discuss this paper but I feel it should not be passed without a word of commendation. I do very little in the way of treating Pyorrhea. I am associated with Dr. Lucas, who is making a specialty of this disease and I refer my patients to him, for he can treat it so much better than I. I think we are careless and neglectful of this disease. The Doctor will say in many cases "I doubt if this can be cured" and the patient will let it run on. From a hygienic point of view it is best not to let the diseased teeth remain. I believe we, as a profession, are wanting in Pyorrhea and Prophylaxis. We have carried the mechanical part of our profession about as far as we can, with but minor improvements, and now we must turn our attention to the prevention of disease, so I am a great believer in preventative dentistry. I believe the best time to treat Pyorrhea is in its incipiency, the mouth should be kept in a condition to prevent Pyorrhea from getting a foot-hold. We should continually be on the lookout for deposits and teach the children to take better care of their teeth. There may be cases where the patient has taken the best of care of his teeth, and the dentist has done his part, and he still has contracted this disease, but I think that is the exception, rather than the rule. I wish again to compliment the essayist on his paper.

G. W. Cook, Chicago, Ill.: It would be very much out of taste not to say something on this paper, when my fellow countryman has come down here to give it and it is in his own writing and I believe he wrote it himself. There is so much I might say that would not be worth anything, for I don't believe anyone believes anything I say anyway.

There were a few points that struck me specially. All men who have made a special study of Pyorrhea have started out without accomplishing any more than a good careful dentist would accomplish. Now, there are a few men, who have earnestly and honestly tried to treat Pyorrhea and you have heard what one of them has said about the disease. Dr. McDonald struck the proper note when he said that the patient must cooperate and when I have treated such a patient I know that 25 per cent of the success was due to the patients getting their minds made up to follow out the line and give their attention to it. I have prescribed long enough to see that they must do this if they are to get any benefit. There is a difference between a dentist and physician. A bread pill has cured many a patient from the physician, but it will take more than a bread pill to cure Pyorrhea. You will have to follow something like the line of treatment given in the paper. You will have to use care and the patient must cooperate, if they do not it is useless and the hardest patient is the one coming from some other dentist, who has told them their teeth will have to go and he is the first to announce the undertaking establishment for their teeth. However, he will say there is some one in Paris, or may be in New York or Chicago, who could do them good, but we have just as much trouble as you have.

The attitude of the profession ought to be given to the saving the teeth. If you can't do it, maybe some one else can do it. Dr. MaWhinney can't cure all of them, he does not pretend to, but he does say it is not incurable. Sometimes it is very much like rheumatism. They are treated and they get better and they get worse. The Doctor didn't cure them, but they got better, at times they were benefited. So there it is with the disease all the way through. You can't remove all the causes and say they are immune from the disease.

Dr. J. R. Patrick said there was one way of curing Pyorrhea and that was when all the teeth were extracted, but he didn't say that if the teeth were placed in a normal condition that Pyorrhea could not be cured. Many people are inclined to believe if they can get a dose of this or that and swallow it, it will cure them, but I believe about 95 per cent of all the people will get well without a doctor any way, but it has been borne out by the best authorities that the system needs to be toned up and to get the system to return to a normal condition. There were 2 or 3 points in the paper that I think of particularly—one the loss of contact. Now Dr. MaWhinney and I have been over this and chewed the, well let us say the towel, about this question before. We have had discussions as to this contact point and I have been much impressed by the number of cases of Pyorrhea that have started from improper dentistry. I want to say the rubber dam and clamps are a source of Pyorrhea, or at least it seems to have something to do with it. Most doctors put on the rubber band, etc., charge 50 cents and say good-bye, without cleansing the teeth. Be careful of the clamps and the ligatures and you can avoid many conditions known as Pyorrhea. Conditions should be corrected first, the early treatment of Pyorrhea is very simple in some cases. You have to attend to them while they may be cured and I believe the most important thing in dentistry is to use consideration and do the best you can, for "the angels could do no more." I did not think I was going to read all I had written down. But the simplest remedies in my mind are the best and I think that the important question that is before us is the prevention. Watch all cases, especially of the young people and if the person passes 25 or 30 years of age and has no marks of Pyorrhea, then he is not apt to have it and then there is a time again when he may have it, at a greater age. I have tabulated a lot of cases. I have followed them up by jotting down all I can find out about them. I do not pay much attention to following up the teeth if they have been cured. I would just as soon have one of my patients lose a finger as a tooth. They can get along without their fingers as well as without the first four permanent molars. I write down every little detail of the case and of the patient. I do not play golf, as you can see, so I have more time to this kind of thing. I think it is important to write these things down. I make a note of all the conditions so if they come back again I know what to do. One should remember points of interest in the mouths of their patients. The paper was interesting and the slides were interesting and now to keep up the interest I had better quit.

B. P. McDonald, Goshen, Indiana: No doubt the young members would like to hear from some of the older ones here, and get some information from them—I have practiced for many years in the town of Goshen, I will say a few words relative to the subject under discussion. This fine paper has had my closest attention. There are many difficulties surrounding the treatment of Pyorrhea, and one of the most important to my mind is that of cleanliness and polishing. Many fail stopping the ravages of pyorrhea by not using enough care and time. In these cases, *devoted* and persistent skill is one of the most useful helps to stop the disease. Without the cooperation of our patients, we certainly would fail. It requires an honest amount of enthusiasm in the effort to eradicate pyorrhea, and I have found without it, failure is sure to come. In our homes and schools this enthusiasm is essential. We know pyorrhea is increasing rapidly. I think, our fast living has much to do with it, carelessness and fast living chiefly. Simple living might eradicate half of it. I have found cases in my practice of oblique pyorrhea, as I might term it. It would almost circumvent the teeth. I could not reach all the parts infected, these are hopeless cases. But I do feel, that *persistent effort* is essential to anything like a successful result, in the treatment of pyorrhea. And even then I often fail to stop its ravages.

L. H. Wirt, Muncie, Ind.: I was unaware until I looked over the program a moment ago, that I was to be called upon to discuss the paper, therefore if I should digress from the subject, I hope you will pardon me. I do not know much about Pyorrhea, although I take a great interest in it and agree with the essayist in all he has said.

As I have no basis on which to pose as an authority, I can only give you my own observations for what they are worth. I believe that most of those men who do not undertake the treatment of Pyorrhea are doing themselves and their patients great injustice. I believe most of them can cure it if they take the proper steps. My own observation has been, that it is a disease coming in the later years of life. I have never seen a case of it in youth.

The cure of it can best be accomplished in cases where it is treated in the incipient stage, rather than where it has been allowed to go on for years, especially until the time of senility. I believe that the best thing to do in the treatment of Pyorrhea, is to remove the cause, whether local or remote or both.

Careful and thorough instrumentation is necessary to remove absolutely all of the deposits. We are apt to miss the minute points of calculus and then as we fail to effect a cure, become skeptical of treatment.

However, we should not believe that once cured, the disease will never recur. In most cases, it may come from purely local causes, and in many the cause is found in remote systemic conditions. We should have the cooperation of an alert physician.

Many patients will not go to the physician unless we urge them but if we do not urge them we will fail in saving the teeth in some cases where otherwise we might succeed. I think if we all do our own parts as individuals and do as much for our patients as we would want done if we were the patients, the time will come when Pyorrhea as a disease will not be such a bugaboo, as it has in the past.

Elgin MaWhinney, Chicago, Ill. (Closing discussion): I do not feel that I can add very much value to this discussion except to emphasize a few points suggested by it.

The co-operation of the patient was referred to. This is certainly a most important point. Unless the patient is vitally interested in what is being done and is thoroughly saturated with the desire to have the trouble overcome, a dentist is working against a serious handicap.

However, I find that many dentists assume that patients will not take interest nor pay reasonable fees for this kind of service, when the facts are that many of these cases come from the towns of these complaining dentists to pyorrhea specialists at great expense and remain for several months in order to make cure possible.

Do not forget the fact that many people appreciate your services in treating pyorrhea in exact proportion to what it costs them, and that most people follow your instructions, keep their appointments and in every way help better when they have money invested in the outcome.

On another occasion I summoned up the difficulties in pyorrhea treatment as follows:

First—Inaccessibility of the deposits.

Second—Lack of necessary finger training to enable one to locate and remove the deposits and polish the affected tooth surfaces.

Third—Hardness and tenacity of the deposits.

Fourth—Pain incident to the work.

Fifth—Lack of suitable instruments.

Sixth—Lack of co-operation of the patient.

Seventh—Lack of concentrated effort on the part of the operator.

Where deposits are high up, difficult of access and hard I sometimes simplify the work by packing the pocket with a rope of cotton saturated in 25 per cent pheno-sulphonic acid for 24 hours. This will not only open the pockets and make the deposit accessible but will soften it and render the operation less painful.

To control pain I pack pockets with rope of cotton saturated in cocain solution. Care should be taken not to get cocain anywhere but in the pocket, and moisture should be kept away until anesthesia results.

Regarding instruments, I only can say that the instruments that suit one operator may not suit all, but there are now a variety of instruments in the market so that with a little care in selecting all can provide themselves with suitable ones.

The lack of patient co-operation, I have already alluded to. The concentrated effort on the part of the operator is essential to success.

Take one affected tooth and one surface of that tooth and work on that until it is clean and smooth before thinking of another.

Then make regular appointments for this kind of treatment work and do not allow patients to just "happen in" for they are sure to come in when you are engaged in some important operation and will certainly neglect to be thorough with one or the other and it is almost certain to be the treatment case that will suffer. Make the work seem important to the patient by making regular appointments for treatment work and then charge a fee commensurate with the service rendered and the ability to pay, remembering that no one gets too high fees for honest, intelligent, painstaking service.

SOMETHING ABOUT NON-COHESIVE GOLD AND WHERE AND HOW TO USE IT

By H. B. Tileston, D. D. S., Louisville, Ky.

(*Concluded from page* 58 *January Summary.*)

A strong sentiment has grown up in recent years, against any display of gold in the front of the mouth. Such display is now looked upon, quite properly, as vulgar, and our lady patients especially, object to gold fillings that show. And men, too, are more sensitive about it than they used to be. For this reason it is often expedient to preserve the labial plate in upper incisor and cuspid cavities, even if composed of enamel only. The difficulty has been to adapt cohesive gold with sufficient accuracy to the labial wall or plate of enamel that there will be no leakage, with subsequent discoloration.

Not an easy thing to do with cohesive gold. But it may be accomplished with certainty by placing the smooth face of a flattened non-cohesive cylinder against the under side of the labial wall and condensing it there by packing the cohesive gold that the balance of the cavity is filled with, against it.

It sometimes happens, in building cohesive gold into a cavity, that the center of the mass gets higher than that next to a wall, or in some other way, a crevice is left between gold and cavity wall or margin.

Cohesive gold cannot be used to correct such a fault, because it will stick to that it must pass and cannot be forced beyond it. A bit of non-cohesive ribbon can be tucked into such a defect and will make all snug and safe again.

These suggestions as to the value, and methods of use, of non-cohesive gold are not new. They have been in use by many operators for years. But I know there are some who have not made the use of this material that they might do to their advantage, and that some have never employed it at all.

To such as these I address my paper as the experience of over a quarter of a century of eminently satisfactory practice of the methods described, and I most earnestly advise all who have not made use of it, to give a place in your gold foil operations to non-cohesive gold.

It will save time and it will save teeth.

DISCUSSION

Dr. W. W. Gates, Indianapolis: I wish to compliment the essayist on his most excellent paper. Knowing very little about non-cohesive gold I can only go over the many good points the Doctor's paper contains. I feel I am not alone in this, as the per cent of dentists that are familiar with non-cohesive gold are very few indeed. After reading the paper I came to the conclusion that the Doctor was surely an expert in handling non-cohesive gold.

I agree with the essayist when he says the use of non-cohesive gold is a lost art, and I think a very great one—and should be revived. I believe, like Dr. Tileston, that all filling materials have their place in dentistry. It is up to the dentist to use his best judgment as to what is best to use in a given case. I also believe that most of us are in too great a hurry in using all the new filling materials that are brought to our notice. Therefore, it is advisable to stick to a few of the old chestnuts and go slowly with the new ideas.

I sincerely believe that a good gold or amalgam filling is far better than any gold inlay. I agree with the essayist that a dentist cannot afford to be a faddist, but I am afraid we have a great many practicing today.

Dr. Tileston points out in his paper the places where non-cohesive gold can be used to the greatest advantage, also the kind of instruments to use. I am pretty sure if we will take the pains to follow out his most excellent instructions we can finally master the use of non-cohesive gold.

There are two places that Dr. Tileston speaks of especially, that appeals to me, and I think all of us could apply it there. First, against the labial plate in upper incisors where it is almost impossible to condense cohesive gold. Second, in places where we have failed to fill the margins perfectly with cohesive gold. As the doctor says in his paper it is very hard to use cohesive gold in this locality on account of its adhering to the gold instead of hugging the margin.

The lost art in the use of non-cohesive gold should most certainly be revived. I am satisfied if we were all good non-cohesive gold workers there would be very few gold inlays inserted.

Dr. S. B. Hartman, Ft. Wayne: In coming before an association of dentists at this day in the history of the profession, and advocating the use of soft gold for filling teeth, it may seem like time had turned back in its flight, and that we are revolving in a cycle, and had returned to a place occupied more than half a century in the past. In this day of gold inlays, when the various forms of foil seem destined to follow in the path of its predecessor (soft gold), I almost hesitate to speak of the non-cohesive gold of the past; yet perhaps some persons who are here are familiar with the history of this form of gold, and what it has done for the salvation of the natural teeth. And as they think of what it has accomplished and its achievements, are like the man in the poem of our distinguished Indiana poet, who for years had been absent from his old home, returning and hearing a band of music, remarked, "I would like to hear the 'Old Band Play,' " or in other words, once again here at a meeting of dentists talks on a line old to them, but of which many today know little, if anything, about.

Soft gold was largely used for filling teeth in the early days of the profession, and no doubt was the first form of gold used for that purpose—and previous to the year 1857, was the only form of gold known to or in use by dentists. Of the methods used in filling, the essayist preceding me has described in detail. Personally my first experience in filling teeth was with cohesive gold, but through observing persons using non-cohesive gold, and the favorable results they obtained, I was led to the use of this gold, and for a long time used the same in practice. But subsequently through the inability of getting strictly soft gold foil, as much of the so-called soft gold partook largely of a semi-cohesive foil, I again resumed cohesive gold. Yet I must say that in the use of soft gold I was favorably impressed with the following results: It can be worked rapidly, thus saving much time, and thus relieving the strain and anxiety of which all workers of cohesive gold are familiar. In the use I observed that it had great adaptability to the walls of the cavity and readily conforms to the same. This is largely produced from the form of the pellets or cylinders which form or cause the wedge-like action, and thus of necessity produces a conformity to the walls of the cavity. In the use of this gold I think the pellet the most favorable, yet many operators have great success with ropes and cylinders. It is often observed that in filling with this gold, it slips against tooth walls more easily than against itself, thus can be used with satisfaction in the way of keying a filling at cavity margins. In the choice of numbers in the use of this gold, I think 5 or 6 preferable. It has been said and thought by some dentists, that soft gold has a tendency to crumble and fall to pieces; when this occurs, I think it must be through faulty manipulation.

Soft gold has a grand record, and for durability shows it has done good service for many years.

At a meeting of the Pennsylvania State Dental Society in 1875, Dr. Marshall Webb in a paper on "Operative Dentistry," writes as follows: "The writer recently operated upon teeth which contained fillings inserted twenty-five years ago (this would be in the year 1850), by Dr. Thos. W. Evans, of Paris, then practicing in Lancaster, Pennsylvania, and never did filling serve the purpose intended better than they. The gold was so impacted against the dentine and enamel as to keep the surrounding tissues clear and bright. But in consequence of this they were, even after the lapse of a quarter of a century, discernable through the enamel." (What today is known as the golden smile.) The writer further says, "These fillings were removed and others inserted simply because they had not been made fully even with the edges of the enamel, and because they were also concave." From the date of the work referred to by Dr. Webb, we feel to a certainty that the gold used must have been soft or non-cohesive, also from speaking of the lack of contour, and the concave appearance of the gold.

It may be somewhat entertaining to know why and how soft gold was discontinued largely in use and superseded by cohesive, and I do not think it would be deviating to too great an extent to relate the peculiar way of its discovery as a form of gold for filling teeth.

THE DISCOVERY OF COHESIVE GOLD FOIL

Dr. A. Westcott, of Syracuse, N. Y., in the Spring of 1840, then practicing in Homer, N. Y., sent an order to a dental depot for ⅛ oz. soft gold to be sent by mail. As this was during the time of high postage, to lessen the weight, the leaves of paper between the sheets of gold were removed. When the gold came Dr. Westcott was unable to separate the sheets, and as he expressed it says the sheets had, as it seemed, grown together. The gold was returned and an apology came from the dealer, saying that once in a while gold became sticky. Dr. Westcott reasoned that if gold would weld in a mail bag, why not in a cavity in a tooth, and thus came the advent and introduction of cohesive gold to the profession. Yet Dr. Westcott says he continued the use of soft gold with great tenacity, and the use of his newly discovered method was confined principally to finishing fillings. He says, "I continue the use of cylinders of soft gold in all the parts of the cavity I can reach," and also adds in his remarks, "I seldom or never fill a cavity entirely with adhesive foil."

In concluding this paper I would say that soft or non-cohesive gold has had its history, that it can almost be said that it is only a thing of memory, yet we cannot gainsay the good it has served humanity. It is hardly probable that it will again hold its place as in the past. The noble men of the profession who accomplished great results in its use, and with it built the golden foundation upon which today rests cohesive gold foil, gold inlays and porcelain inlays, have nearly all gone to their reward, yet they have left to the profession the memory of their wonderful achievements. And if perchance someone in this day should wish to welcome soft gold, it would be like grasping the hand of an old friend, and a feeling that sometimes the old ways are good ways, and sometimes it redounds to our good to make old ways what may seem like new ways.

Dr. G. E. Hunt, Indianapolis: Once upon a time there was a gentleman in a party of other gentlemen and they were talking of diets. This particular gentleman said he lived one time for a year on milk. Someone said, "When was that?" and he answered, "The first year I was born." Now, the first month and from that time on after I was born in dentistry I fed very largely on non-cohesive gold. The advantages of it I think are undoubted, and but for the fact that I can see before me one or possibly two or three or more who had the same preliminary training in dentistry that I had and could tell it much better, I would like to dilate on it at some length.

In the last several years in lecturing to students I have dwelt on the ease of starting fillings with non-cohesive foil, but from the observations I have made I know of but one that ever got the idea. He went to Illinois, was invited to give a clinic and gave one on starting fillings with non-cohesive foil absolutely, the only student I know of that used the stuff after he got out of school. Another student came to me later and said he had met some dentists and one of them asked him where he was from and he told him. He said, "Oh, yes, that is that non-cohesive school over in Indiana." The method I was taught was just a little different from that of Dr. Tileston, although the same results obtain. I take a heavy cohesive foil and get a piece large enough to cover the whole of the surface of the filling, and just before starting to condense the filling in a rootward direction, place on the cohesive foil and condense that down with the non-cohesive. Thus I can get an additional hardness that you can only get with the cohesive foil.

I have in my mouth fillings that were put in thirty years ago of non-cohesive foil, and some of them are on the occlusal surfaces of molars.

It seems to me that the wedge method as described is the simplest and easiest method to start a gold filling, but as long as the average dentist can use the precipitated gold he won't use the non cohesive gold. One trouble is the fact that the manufacturer does not realize now how to put up these cylinders. They wrap them too loosely, and a cylinder apparently large enough to almost fill a cavity will condense down so as to fill only a small part of it. A year or two ago I had Mr. Hood, the maker of gold down east, make some cylinders especially at my suggestion, and he wrapped them quite tightly and they were very satisfactory, but it seems to be a lost art, making these cylinders properly, as well as the using of them after they are made. I have spent a good many days in making cylinders out of No. 4 non-cohesive gold and they were more satisfactory because they were better condensed.

I am very much pleased to have heard the paper. It is sort of a "Hark from the tombs" paper, but it is of interest and I think of much value. I would be glad to hear from some of the men who were brought up on non-cohesive gold.

J. E. CRAVENS, Indianapolis: Dr. Tileston's manipulation is correct. I have no criticism whatever to offer about that, nor about the method of the preparation of cylinders where it is necessary to do so at home. I think, however, that the proper cylinders can be obtained. I have become very much attached to the use of the old R. S. Williams non cohesive gold cylinders, Style B. They are made today on order by the Consolidated Dental Manufacturing Company, of New York City. After Mr. Williams' death they bought his entire establishment from the widow and you can get the same cylinders today. I have ordered them at different times and I find they work all right. They are very closely wrapped and you can get them in different numbers, but you must specify Williams' Style B cylinders. They are always non-cohesive.

I said I approved of the Doctor's manipulations exactly. I differ with him a little in the sort of instruments he uses, but that is a preference of the individual. I think I will have to take exceptions to some of the Doctor's conclusions in regard to the cavities, the localities in which it is applicable. I use it in all gingival cavities that are accessible, from molar to molar, and so far as the cuspids and bicuspids are concerned, I can use it there with just as much facility. I have not filled a large gingival cavity with cohesive gold in thirty years. It is the rarest thing in the world that I resort to cohesive except in those cases where it is necessary to use a very small amount of gold. The very small cylinders are sometimes necessary and these I roll and make just as compact as I can. I want it as nearly a wire as I can make it.

As I was saying, the only exception was in regard to the places where this gold is applicable. I think it is applicable to every gingival cavity that is accessible. I do not think it is ever necessary in working exclusively with non cohesive gold to apply the rubber dam or clamp. If the patient has considerable saliva I let him expectorate, I dry out the cavity and put in another cylinder. I can prepare such a cavity and fill it in less time than I can adjust the rubber dam and prepare the cavity for cohesive gold.

In regard to approximal cavities such as the doctor has shown here, my habit has been to use a very large cylinder in the cavity at the cervical margin, put in a wedge and press it to one side as he has described, if it is a case I want to finish with cohesive gold, I take No. 30 cohesive gold and cut it into ribbons of proper width, and a half-inch or more in length; after I have two cylinders in place I take the third cylinder and press it down in the center between the first two—carrying with it a ribbon of cohesive gold—press it to one side and apply another. Then in the center I insert another cylinder and ribbon of cohesive gold. By that means I have a series of cohesive blossoms (I call them). Then I finish the surface with cohesive gold. In a case of that kind I fill the cavity from a half to three-fourths full of the non-cohesive cylinders.

I want to congratulate Dr. Tileston on his courage to come before a modern association and elucidate this subject.

DR. MARGARET E. SHAW, Rossville, Ind.: Having heard the paper of Dr. Tileston on "The Methods of the Use of Non-Cohesive Gold," I wish to say that I have used the non-cohesive gold as a filling and shall adopt his method of using the cylinders. As Dr. Gates just said to me, "It has been well worth while to have come out to hear Dr. Tileston's paper this evening."

MAX M. EBLE, Louisville, Ky.: I must say I feel highly honored in being able to be present this evening, especially as the honor was conferred upon me by making me a member of this association without paying my dues. That is more than they will do for me in my own state association. I have been highly entertained by the essayist, as well as by those who have previously discussed this paper, and especially by the written discussions, which show much thought and bring to light some valuable points.

I may not add anything to what has been said, but I think the reason that soft foil is almost going out of date is due *largely* to the fact *that* instead of using *soft foil* too many men who have tried to make soft foil fillings have used *semi-cohesive gold.* They have been unsuccessful in making these fillings for the very reason that Dr. Tileston pointed out to you, that the third cylinder when pressed in between the two, instead of sliding down, coheres and pulls the two away from the side and it does not go to the bottom.

The mere fact that a man brings up a subject that is old is a necessity, since we are apt to forget many things which are old and still valuable. We have three classes of men, those who grab everything new, the faddists, who just as quickly as something new comes out they work it to death. We need that kind. Then there are a few who think, ''This was all right for my grandfather, it is all right for me.'' Then we have the middle man, the combination of these two that makes the successful dentist of today. There is an old expression, ''Be not the first to leave the old, nor yet the last to try the new,'' so this third kind is the very kind of a man we want.

I feel very much like a gentleman at a banquet, who was asked to make some remarks and said, ''Now, if I could just get up and say on my feet what I think when I am sitting down there I would make such a good speech that no one would want to talk afterward.'' That is my condition. If I could say all I thought while I was sitting down I could make a better talk than I am making.

I have taken the liberty to respond for more reasons than one. I do not feel quite as strange as you think, because the first twenty years of my life were spent at Troy, Indiana, in the heart of Perry county, where I was born and raised, and I expect the only reason that the city of Indianapolis was not afflicted with my presence sooner was that I did not have money enough to get any further than Louisville.

It is always a pleasure to come to the Indiana State Dental Association and I am sure I will repeat the offense at least once a year.

DR. J. P. BUCKLEY, Chicago: I have never yet pretended to be that which I am not. I have never inserted a non-cohesive gold filling in my life and I surely do not intend to inflict what I do not know about the subject upon this audience. I do admire the (I don't know what to call it) of Dr. Tileston for presenting this subject in this day and age of gold inlays, and porcelain fillings, and artificial enamels, but it sounds good to me to hear someone discuss a subject that I have not heard discussed very much lately. If I did not know Dr. Tileston so well—the first man I ever saw put in a gold inlay was Dr. Tileston—I would think he was behind the times. I have seen him insert artificial enamel also, as well as gold inlays, and I admire him for discussing this subject tonight. It puts a proper check on our enthusiasm.

C. A. BARNHILL, Indianapolis: I have enjoyed this paper very much. It appeals to me, as soft gold is something I have used for the past ten or eleven years. My teaching in college under Dr. Clayton was along this line, and from that time on I have used it. I do not use soft foil exclusively, I don't think I could if I wanted to, but to compare it to gold inlays, I would take it in preference to them. Possibly had I used gold inlays as long as I have soft foil I might change my mind, but to me, many and many a cavity is much more easily filled with soft foil than inlays. Many a cavity I can fill with soft foil and do it better and in less time or in the same time that it would take to make my preparation for the inlay.

The essayist has covered the subject thoroughly, but one thing he did not mention that I carry out, is in using tin foil to start with. I was taught that tin foil was a great tooth preserver, therefore in many cases I have used it. However, the soft foil itself might have done the same work. I have in my own mouth a soft foil filling put in twelve years ago by an amateur who had received his teaching in the Indiana college. That filling has recently failed, and I fully believe that a cohesive filling in the same place would have failed years ago. Therefore I give the soft gold full credit.

Dr. E. V. Burt, Lafayette: I did not hear the doctor's paper, but I have heard some of the discussions, and I must say that I have been using soft foil for about forty years. I do not use it exclusively, I use my judgment as I would in any other work of dentistry. I believe there are a great many failures made in soft foil, as there would be with cohesive. I think the majority of failures are made for two reasons. One is that they use too coarse instruments, the other is that they try to do the work too rapidly.

In regard to the cylinders, I make my own cylinders. I make them out of foil, but I want very soft foil. You have to learn that as you would anything else.

I do not know that I have anything practical to add to what has already been said. My experience has been about like that of the rest of the gentlemen who have spoken.

Dr. John Zubrod, Evansville, Ind.: Dr. Hunt made the statement that only one student left the Indiana Dental college who had ever used soft gold. I spent three terms there and we had among us at that time a soft gold foil worker. Let us have Dr. Lucas tell how he fills with soft foil.

Dr. C. D. Lucas, Indianapolis: Dr. Zubrod has been somewhat misinformed with reference to my ability for inserting soft gold foil. However, he is right when he says I do "try" to perform that kind of operations.

I always enjoy hearing a paper by my good friend, Dr. Tileston, and when I asked him to appear upon our program I made some suggestions as to subjects, and the subject I wanted to hear discussed more than anything else was the manipulation of soft gold foil. I think it really is more or less a lost art.

Now, in the discussion of the paper, referring to the technique of the operation, all of the work which I have done with soft foil is in accord with the technique suggested by Dr. Tileston, by inserting the foil at the margins of the cavity and wedging it into place with a keying pellet of soft gold. It seems to me that in occlusal cavities especially, and possibly in cervical cavities of the anterior teeth, the soft foil is undoubtedly the best filling material, because, as was suggested in the paper, there seems to be a tendency of the gold to spread out toward the margins, thereby absolutely filling the cavity. The first few times I tried to manipulate soft foil I felt it was beyond me. The soft foil I used then surely had some cohesive properties, because when I tried to insert the key I found it cohered to the marginal gold, thereby dislodging it. Later I tried another soft foil which was non-cohesive. I began using it and eliminated the trouble because it was absolutely non-cohesive foil.

As I said before I have enjoyed the paper very much and I wish to thank Dr. Tileston for appearing before us this evening.

Dr. Tileston (Closing): I have no desire to pose as an antique before this body, nor do I claim to be especially an expert in the use of non-cohesive foil. A great many workers in that material are here who are capable of work far superior to mine. I know Dr. Cravens can do some things I cannot do. I have had the advantage of seeing some very excellent non-cohesive workers in Louisville. Dr. C. G. Edwards is still living in the city and is an excellent non-cohesive gold worker. Dr. Peabody and Dr. Seymour, both now dead, were past masters in the art, and I see work that has been done by these men that I cannot touch at all. Dr. Cravens can do work that I cannot attempt to do, but any of you, if you try, can use it just as well as I can. I am going to give a clinic tomorrow and if I can be of any help to anyone who would like to use it I will be very glad to do it.

The method of filling occlusal cavities that Dr. Hunt spoke of, by combining non-cohesive and .cohesive foil, I mentioned in my paper. Where there is a broad expanse of surface exposed to mastication it is well to have that surface a little harder perhaps than it is possible to get with non-cohesive gold. A few points in the discussion I might refer to, although most people agreed with me. There are two kinds of subjects that seem to call out little discussion. One is very new subjects that people know little about because they are so new, and the other is very old subjects that people know little about because they are so old, but this is something I know is of great value.

These ready made cylinders I did not know could be found. I am going to try to get some of them, as it would save a good deal of time if I could get them ready made.

Dr. Cravens also spoke of the small importance to him, of keeping the cavities dry. Now, of course, as we do not depend at all upon any cohesive property in our gold, it does not make any difference whether it is wet or dry. I do not believe, however, I can make as good a filling under saliva as when the field is kept dry. The use of the matrix is in my hands unnecessary, unless the approximal tooth is missing entirely.

Now, I do not by any means suggest, as some have intimated, that this should take the place of inlay work. It is only in those few localities where a filling can be made better with non cohesive gold than with any other that I recommend it. If the cavity indicates an inlay I would put in an inlay. But what I plead for is that you should use your judgment, use materials intelligently, and not try to adapt any one thing to all kinds of usage. Make use of everything that the inventive genius of man has given us and strive to get the best results possible.

A PRACTICAL SUGGESTION

By C. S. Starkweather, D. D. S., Bellaire, Ohio

If gold other than pure be used in casting, it will be found to be brittle. This may be overcome by plunging the gold into a saturated solution of salt water, dry over a flame and melt and cast as usual.

The salt water acts as a flux and will overcome the brittleness—that is the objection to scrap gold in bridge work. Try it.

SOME PRINCIPLES OF RETENTION IN ORTHODONTIA

By Martin Dewey, M. D., D. D. S., Kansas City, Mo.

Continued from Page 53 January Summary

THE BACKWARD FORCES WHICH MUST BE RETAINED.

I HAVE said before, in these articles, that it was only necessary to retain the backward forces of the teeth. Now I will consider more definitely what these forces are.

One of the first theories was, that the fibres of the peridental membrane stretched, thereby allowing the teeth to move. As a result of this stretching of the fibres of the peridental membrane, the teeth would return to their old positions of malocclusion unless retained for some time. That this theory was wrong is proven by the fact that the fibres of the peridental membrane are not elastic. There is no stretch to the individual fibre and all the movement possible within the membrane results from the general arrangement of the fibres and not from the stretching of the separate fibre. When a tooth is moved from a position of torso-occlusion there is great stress placed upon the fibres of the membrane which are arranged to resist the forces of mastication which tend to rotate the tooth.*

Nevertheless, we have no proof that even the fibres at the corner of the tooth in torso-occlusion are stretched any perceptible amount. In fact, the physical structure of the fibre is against any such a result. Bearing these facts in mind, the only change which we would get within the peridental membrane would be the result of a changing of position of the fibres within the membrane as a whole or the cutting off of some of the fibres by the osteoclasts.

---

*See Noyes on Peridental Membrane Kirk's Operative Dentistry.

Any way we may look at it, the conclusion which we are forced to is, that the tendency for teeth to return to the old position is caused by some force besides the disturbance within the peridental membrane. Even in young children the ease with which teeth move is not so much the result of the great amount of space occupied by the peridental membrane as it is because of the cancellous nature of the bone.

Yet, the fact remains, that after teeth have been moved there is a great tendency for them to return. In fact, they often act as if an elastic rubber was pulling them back. There being no elasticity in the membrane we must look elsewhere.

The changes which take place in the alveolar process during tooth movement have been discussed by many, and it is well known that something does happen. Just what it is we are not positive as no one has been able to obtain a section of the jaw of a patient before tooth movement, regulate the teeth and then get another section and see the change. However, from studies of sections cut through various jaws, carefully made models and good skiagraphs made before and after treatment we are able to form what is probably a very accurate picture of what occurs. It has been proven that there is much less absorption of the alveolus than was formerly supposed. The amount of absorption in front of the tooth that is being moved and the "hole" left behind is less than we have been led to believe by the former writings on the subject. I do not say that there is no such absorption, but it is very little, for regardless of how far a tooth may be moved, moving it as rapidly as possible, I have yet to see the case in which it was possible to pass a probe into any space left behind the moving tooth. I have tried it many times without success. Also, skiagraphs made before tooth movement and immediately afterwards fail to show that the alveolus has been absorbed. Skiagraphs made by Dr. Ketcham, of Denver, reveal the fact that the alveolus moves with the tooth in the majority of cases, if not in all. All he has skiagraphed show such movement.

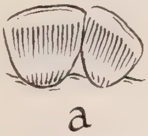


Fig. a.

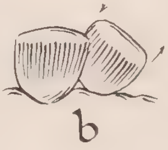


Fig. b.

Then, the question of the retention of teeth becomes one of retaining the backward spring of cancellous portion of the alveolar process until new spiculi of bone can be built to hold the teeth and their alveoli where they should be.

Having said that the great amount of the backward tendency of regulated teeth is in the alveolar process, we must not conclude that the peridental membrane is of no importance, for it is. By a careful study of the arrangements of the fibres and enlisting them on our side, we are often able to utilize their inelastic property to a good purpose.

In the retention of teeth which have been moved from torso-occlusion, if but one corner of the tooth has been moved, but one corner need be retained. Take the diagram (*a*) in which the distal corner of the tooth is moved mesially; no retention will be needed on the mesial side of the tooth as the fibres and bone have not been disturbed. However, in diagram (*b*), the mesial corner will be moved distally which will make it necessary to retain both corners of the tooth owing to the fact that both the mesial and distal corner will resume the old position of malocclusion.

The retention of teeth then becomes a question of exerting force in some manner to overcome the spring which has been produced on the spiculi of bone through the attachment of the peridental membrane; force having been produced on the fibres of the membrane as a result of the force which was applied on the moved tooth. This being the case, it becomes necessary to take advantage of the attachment of the peridental membrane, the shapes and location of the teeth, as before cited. This now brings us to the consideration of the retention of the individual teeth after various tooth movements.

TEETH MOVED FROM POSITIONS OF LINGUAL OCCLUSION

In the retention of single teeth which have been moved from positions of lingual occlusion we must bear in mind that there has been a change in the alveolar process in the immediate vicinity of the tooth and a change in the peridental membrane. Take a case similar to Fig. *c* in which a central is in lingual occlusion. It necessarily follows that there must be expansion of the entire arch, at least in the region of the anterior teeth. As force is applied to expand the teeth there is an activity of the cells set up which absorbs the spiculi of the cancellous bone sufficiently to permit the cortical plates to move. In fact, there must be considerable "tearing down" and rebuilding of bone within the immediate neighborhood of the tooth which is in lingual occlusion. As the force is continued and the bone changes there is a movement of the alveoli with the teeth through the cancellous portion of the alveolar process. Space being made by the expansion of the arch for the labial movement of the tooth in lingual occlusion, a change is produced in the fibres of the peridental membrane which runs from the cementum of one tooth to the cementum of the other. The attachment of these fibres must be loosened to a great extent to permit the central and lateral to move from the malposed tooth and also to permit the malposed tooth to be moved labially. We now have a case which may be described as having the fibres of the peridental membrane so changed that there is practically no connection between the cementum of the three teeth shown in Fig. *c*. Each alveolus has been moved through the cancellous bone by the attachment of the fibres of the peridental membrane; the remaining spiculi of cancellous bone are tugging to return each tooth and alveolus to their old position. There is no common structure which holds the teeth in their new position. Either one of the three teeth could be easily moved without de-ranging any of the other teeth. In fact, care must be observed in the adjusting of the retainers to prevent any of the teeth from being elongated.

The appliance used in the retention of teeth is some form of a band and spur (Angle) or the combination of two bands and two spurs united. By the application of this mechanical principle most all, if not all, teeth can be retained. However, care must be taken in placing the spur which is to rest on the teeth so that the backward tendency of the teeth will not cause movement of one or more of the teeth retained. In other words, it must be remembered that a tooth is made up of a number of inclined planes and that there are only certain parts of a tooth upon which a spur can rest and remain stationary. For example, take the labial and lingual surfaces of any of the anterior teeth, which are shown in Fig. *d*.

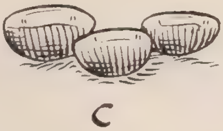


Fig. c.

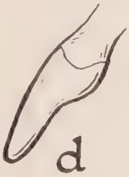


Fig. d.

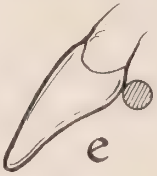


Fig. e.

This shows the labial and lingual surfaces of the tooth upon which the spur must rest. In Fig. *e* the proper position of the spur is shown in cross section. If placed higher, as in Fig. *f*, the tooth having been moved from a position of lingual occlusion in trying to return to the old position would be elongated by the inclined surface of the tooth which is in contact with the spur. If placed as in Fig. *h* the tooth upon which the band was placed would be elongated by the spur slipping occlusally as the tooth moved distally. The elongation of teeth because of the improper position of the spur can be easily understood when we remember that the fibres of the peridental membrane which pass from the cementum of one tooth to the cementum of the other tooth, have had their attachment broken up while the teeth were being moved. Even if teeth have never been moved we must not lose sight of the fact that they are situated in a substance which is constantly yielding to forces—normal or abnormal.

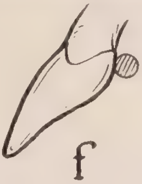


Fig. f.

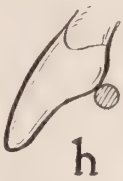


Fig. h.

In the retention of teeth that have been moved from torso-occlusion we must use great care in the placing of the spur for the tendency of the tooth to move to the old position is more energetic than if the tooth had only been moved labially or lingually.

It may be advisable to elongate some tooth slightly after the teeth are in proper shaped arches. By observing the inclined surfaces of the teeth and placing the spurs accordingly the required elongation can be accomplished during the period of retention. However, I must caution all operators that cases, in which advantage is taken of the inclined surface of teeth, require more careful watching than other cases do, as there is more chance for the force to become misdirected.

I have before spoken of the disadvantage of having too many bands on the teeth during retention. By the application of spurs and placing them properly we are able to retain all tooth movement of the six anterior teeth by having but two bands. Take the rotation of the four anterior teeth as shown by diagram Fig. *i*. The anterior teeth must be moved labially and rotated. As none of the mesial corners of the teeth are moved distally provision only has to be made to retain the labial movement. The torso-occlusion was also corrected by a mesial movement. Therefore none of the teeth having a tendency to move mesially no attention is needed in that direction. Fig. I shows the teeth upon which the retainer is placed and the combination of spurs used.

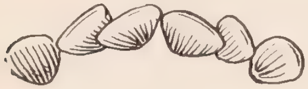

i

Fig. i.

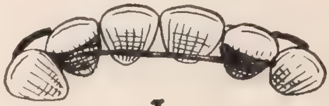

I

Fig. I.

In Fig. *j* the mesial corner of the left central must be retained and it is accomplished by placing a spur on the mesio-labial surface of the left lateral band, as shown in Fig. J.

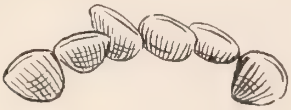

j

Fig. j.

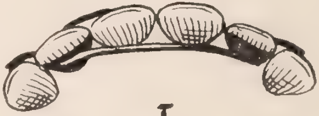

J

Fig. J.

It is needless to show any other combination as the principle is the same in all cases. 1. Use as few bands as possible. 2. Combine spurs so as to overcome the backward tendency of the teeth. 3. Place the spurs in such a position that they will rest at a point on the teeth which is not an incline.

RETENTION OF EXPANSION OF ARCHES IN CLASS 1.

There have been several plans used for retaining the expansion of the arches. Any form of appliance may be used but the same principles must be observed. Namely, the appliance must be so placed that it will not slip on the surface of the teeth. If a lingual arch is used the arch must bear on the premolars in such a position that they will not be elongated, or the appliance. D bands may be used on the molars to maintain the position of the lingual arch.

Another plan as shown by Dr. Angle in the 7th edition of his book, is to bend the lingual arch so that it will lie in contact with the teeth in such a position that the spring will hold the arch from slipping either up or down.

I have stated that two bands with spurs properly adjusted is sufficient to retain the six anterior teeth. I think it much better to combine spurs than to increase the number of bands, as bands interfere with the normal approximal contact of the teeth. In extreme cases of rotation of the anterior teeth it may be necessary to place bands on the canines and run a wire across from one band to the other on both the labial and lingual surfaces of the teeth. The labial wire will be no more unsightly than bands placed on the teeth to prevent rotation and each tooth will be held between the labial and lingual wire and still be permitted to settle into the line of occlusion and rest in contact with the approximating teeth. An occlusal view of the appliance would be as shown in Fig. G. The teeth before being moved being in a condition as shown in Fig. *g*.

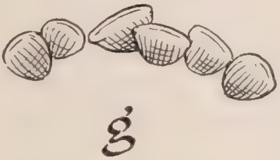


Fig. g.

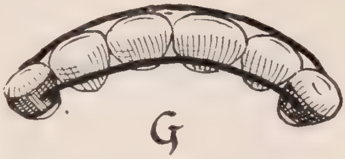


Fig. G.

(To be continued.)

A SERIOUS MENACE TO THE WELFARE OF THE COUNTRY PEOPLE

By A. P. Kilbourne, Stewartstown, Pa.

IN the country and small towns we have a condition that our City Brother fortunately does not have to contend with, namely, ignorance. I do not refer to the lack of knowledge on the part of the patient, though there is much room for improvement along that line, but to the gross ignorance of the country physician in regard to the teeth, and the effects produced by their disease and by their loss. I have questioned many physicians and students and thus far have found but two of my acquaintance who have any knowledge worth mentioning so far as the treatment of dental disorders are concerned.

Several cases have come to my notice of late where a little knowledge of dentistry on the part of the physician would have saved the patient much inconvenience, suffering, and in some cases, actual disfigurement.

Case No. 1. A boy with abscessed lower tooth, and physician advised poultice on face to bring it to a head. It was brought to a head, and opened on the outside of the face, leaving a very bad scar, large enough to be very disfiguring.

With proper treatment this need not have happened, as but very few cases of this kind need be opened on the outside of the face, if properly treated.

Case No. 2. Married lady, about 30, suffering from an attack of grippe, and later developed a case of neuralgia, which the physician had been treating with drugs for several days without trying to find the seat of the trouble. I called at the house to inquire after her health, and the patient mentioned her neuralgia; upon examination I found left lower lateral incisor tooth dead and sore. I opened and sterilized the root canal, and the next day the trouble had all subsided. The joke is, the physician could not see the connection between the diseased tooth and the neuralgia. Yet he was a good physician and in anything except cases needing dental treatment, would be hard to excel.

Case No. 3. Patient came to my office for the removal of the roots of the right lower second molar, after a physician had attempted to remove it, but had broken it off and butchered the tissues generally. I succeeded in removing the roots, that being the only thing advisable, owing to their splintered condition. In this case, all the other lower molars had been extracted, and this tooth was the only means of mastication left, but the physician unhesitatingly attempted to remove the only tooth that could have been used as posterior abutment for a bridge, thus restoring a good surface for mastication, that now can be accomplished only by means of a plate, which can never be as satisfactory to the patient.

Case No. 4. Patient went to her physician to have an aching tooth removed, and after that was accomplished, the physician seeing other teeth badly decayed, advised their extraction on the plea that they would soon give trouble. This the patient refused to permit, and later came to me for treatment, and now those teeth are filled and are doing good service.

Case No. 5. Patient came to my office demanding that several badly decayed molars be removed. When I urged him to have them filled, he said that his physician had said that "they must come out as they were bad for his stomach." (He was at the time suffering from indigestion.) I refused to extract the teeth, and he refused to submit to any other operation, as the physician's advice had more weight with him than all a dentist could say. He later had the teeth extracted at some other place. It is needless to add that his digestion has not been greatly improved.

I have scarcely an adult patient who has not at some time been more or less injured by the extraction of some valuable tooth that by proper treatment could have been restored to a serviceable condition, had the patient consulted the dentist instead of the physician. Can you imagine anything more inconsistent than is represented by case No. 5, removing a patient's molars as a corrective for indigestion?

Not only adults suffer at the hands of country physicians, but innocent children, who, not having had the teeth properly cared for, are taken to the same physician to have the teeth extracted as soon as they begin to ache, and any dentist knows the result. Some may say that this is confined to certain localities, but, having spent nearly all my life in country towns in various states, I have yet to find a locality in which these conditions do not exist.

I hope the time may soon come when the physicians will realize the importance of the teeth, and not consider them on the same plane as the enlarged tonsils, which, having no known function, may be removed, thereby benefiting the patient.

The physician should also be able to recognize a case of acute abscess, etc., and in facial neuralgia be able to locate the seat of the trouble, if it be from a diseased tooth, and refer all such to the dentist without delay.

There are many physicians, who, realizing their incompetence in treating dental disorders, refer all such cases to a dentist. To these we owe much for the good they do where others would do an injury.

Should any physician desire a better knowledge of any thing pertaining to dentistry, I am sure he will find any dentist willing to give him the desired information, and also to furnish a supply of literature that would be profitable for him to read.

REPORT OF THE PROPOSED DENTAL EDUCATIONAL AND HYGIENIC WORK IN THE CLEVELAND PUBLIC SCHOOLS*

By W. G. Ebersole, M. D., D. D. S., Chairman

Committee on Oral Hygiene, National Dental Association.

Mr. President and Gentlemen of the Cleveland Dental Society.

Your Committee on Education and Hygiene beg to submit the following report:

At the last meeting of this society this committee asked and received the privilege of having this meeting devoted to the reception and full discussion of your committee's report instead of a paper by the chairman of the committee.

This being the case, your committee believes that a brief resume of the work undertaken and accomplished by your committee be submitted prior to the presenting of this report, which has received full and careful consideration of not only the committee of three, but also of the large committee consisting of twenty-two men.

Bear with us then, for a few moments while we give a little history of this undertaking.

The first committee for Educational and Hygiene work, under another name, was appointed at the September meeting in 1898, a little more than eleven years ago, following the reading of a paper entitled, ''Are we, as dentists, doing our full duty to Humanity and the Profession?'', written and presented by the chairman of your present committee. This committee was composed of Drs. Geo. H. Wilson, Weston A. Price and William G. Ebersole. This committee undertook some extensive work in the way of education, in the public schools; in having a competent dentist placed upon the medical faculties, that the student might learn at college the fundamental principles of dentistry, at least, and in having district dentists appointed.

The efforts of the committee met with a lack of appreciation on every side, by the Society, the Board of Health, the Medical Faculties and the Board of Education. The only avenue that the committee was able to open at that time was through Superintendent Jones, of the city schools.

---

*Read November 1st, 1909.

Superintendent Jones agreed to send to the teachers instructions to teach any rules relative to the care of the teeth, that your committee might draft. The committee prepared and presented to the Society data which it believed should be presented to the public school pupils.

The report made by the committee was so severely criticised that it became necessary to eliminate most of it. The matter prepared by the committee, after being censored and then adopted by the Society, was printed and distributed to the teachers who presented it to the pupils at that time. Some of the teachers use now, practically, what was presented then.

Later the committee advised the establishment of a lecture course to be given to the teachers; this the Society refused, as it did most of the recommendations of the committee, which was so discouraging that the committee undertook and accomplished but little. During the third year, however, the chairman undertook and succeeded in having some changes made in the instruction given in the course in Physiology, the point being gained of having a short chapter devoted to the teeth only. The subject matter of the chapter, however, bore only the merest resemblance to that which was presented. This was the best that could be done and was only possible by making use of the influence of the Superintendent of Public Schools, Mr. Jones.

During the year that followed, other attempts were made in various directions, with little results, except that each effort had some educational value to the Society.

The next notable effort which produced any results was the organizing and maintaining of a free clinic at the City Hospital two or three years ago. The prime movers in this work, headed by Dr. George H. Wilson and your chairman, planned to have this clinic held at the City Hall where it would be before the public. The moving of it to the City Hospital caused the loss of most of the influence it was expected to exert, and the results were very discouraging and unsatisfactory.

Two years ago next month the present committee was appointed and the chairman instructed to do something, but nothing that would stir up any contention.

A year ago last May your committee asked the society to give them an expression as to the kind of work it desired to have done.

At that time we were instructed to prepare a pamphlet for office distribution and take up the question of presenting instruction through the schools. A campaign was mapped out which called for the members of the committee to familiarize themselves with all that was being done in the matter of dental education for the laity.

A member of the committee at his own expense, made two trips to Rochester, two to New York and one to Boston, the main centers in this work. Another member made a trip to Rochester and on a trip to the Pacific Coast gathered data from that quarter. A trip was also made to Birmingham, Ala., where one session of the National Dental Association was devoted to the question of Oral Hygiene. The work and enthusiasm shown by the Cleveland delegation at that meeting resulted in the bringing of Oral Hygiene headquarters, of the National Dental Association to Cleveland, which was already the headquarters of the Ohio State Committee on Oral Hygiene.

With the knowledge and data secured, your committee, every member of which had served on the committee from three and one half to seven years, began a campaign for admission to the public schools.

By persistent and untiring efforts applied in every direction, which would shape the public mind to receive our proposition, we succeeded in obtaining a hearing before the Board of Education and obtained permission to examine the pupils in four representative schools.

Within 72 hours after the schools were assigned and the day set, your committee, aided by the chairman of the Ohio State Dental Society Committee, organized and set to work forty odd men to make this examination.

The pupils of the schools, Murray Hill, Doan, Watterson and Marion, were examined in one day. 2677 pupils were examined, showing practically 97% of the children in need of attention from a hygienic standpoint.

Following this a campaign was begun through the press and otherwise, which resulted in our being able to obtain the results which will appear later in the report.

As a result of the examination made, the following petition was presented to the Board of Education.

To the Honorable Members of the Board of Education of Cleveland, Ohio:
Greeting:—

The National Dental Association, through the Chairman of its Committee on Oral Hygiene, the Ohio Dental Society, through the Chairman of its Committee on Oral Hygiene and the Cleveland Dental Society, through its Committee on Oral Hygiene, beg to submit the following report of the examination made last June in four of the representative schools in the city of Cleveland.

This examination of the pupils of the Cleveland Public Schools was made by the Cleveland Dental Society, under directions of the Chairman of the Committee of Oral Hygiene of the National Dental Association, and is as follows:

	Murray Hill	Doan	Waterson	Marion	Total
Number of Pupils Examined...	864	691	298	824	2672
Condition of the Mouth:					
Good	346	132	135	244	
Fair	381	429	99	336	
Bad	134	117	63	241	
Condition of Gums:					
Good	594	504	221	477	
Bad	253	169	73	300	
Use Tooth Brush:					
Yes	101	524	193	243	
No	762	161	100	456	
Teeth Filled:					
Yes	9	275	102	72	
No	843	404	191	707	
Mal-occlusion:					
Yes	230	421	93	343	
No	633	452	169	308	
Teeth containing Cavities......		641	257	745	
Teeth Extracted		89	14	125	
Nationality:					
American	25	657	198	116	
German	4	1	20	73	
English	4	6	45	11	
Italian	828	1	7	420	
Russian	1	...	...	...	
Slavish	1	...	...	...	
Bohemian	...	1	...	...	
Swedish	...	2	3	...	
Irish	...	...	...	9	
French	...	...	1	...	
Norwegian	...	...	7	...	
Polish	...	...	...	49	
Number of Perfect Mouths....	62—7.17%	20—2.9%	14—4.69%	13—1.5%	
Number of Defective Mouths.	802—92.83%	671—97.1%	284—95.31%	811—98.43%	
Number of Cavities...........	3920	4294	1342	5505	

The foregoing report is not as complete and accurate as we had hoped to obtain, due to the haste with which the work was done, and to the fact that a number of the examiners failed to fully interpret the instructions given, relative to this examination.

In marking the general conditions of the mouth as good, fair or bad, quite a number of our men thought that it related to the teeth alone, and, unless cavities were found, mouths were marked good, when, although the teeth were free from decay, the oral conditions were decidedly unhygienic.

The purpose of this examination was not to show simply the condition of the teeth of the pupils, but to show the general oral conditions.

The above was made under the following rules and regulations:

RULES AND REQUIREMENTS FOR EXAMINATION.

First. Men must report at schools at 8:00 A. M., that they may get located and ready for work before schools open, it being necessary to explain to the teachers what to expect and how they can aid you.

Second. Each examiner must have a lady assistant to help keep records and care for instruments.

Third. Each examiner must provide the following:

1. Six mouth mirrors. This is imperative.
2. Two pair pliers and good lead pencil.
3. One cotton-holder and cotton.
4. One alcohol lamp for warming mirrors for use. (Dries off alcohol and also prevents condensation of breath).
5. Two glass tumblers, one for carbolic solution and the other for alcohol.
6. One dish for soap and water for scrubbing mirrors.
7. One cake fine soap.
8. Towels and napkins (Society will furnish napkins).
9. Carbolic acid and alcohol will be furnished.
10. Files will be furnished for filing the blanks, when finished by the assistant.

Fourth. Examinations must be made by mirror only, remember this, by mirror only.

Fifth. No examination with explorer will be permitted.

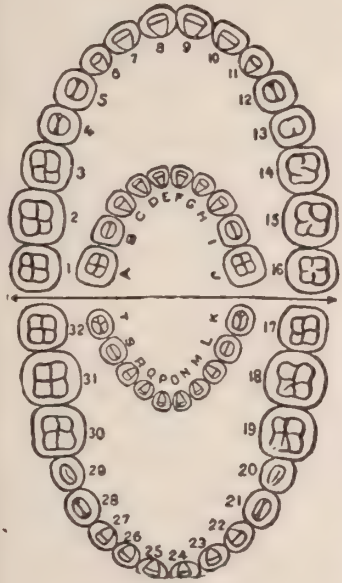
Sixth. Examiner sits with back to light and has pupil step up between his knees and open mouth and examine without touching mouth with hand. (This is necessary owing to the lack of facilities for washing the hands.)

Seventh. In making record, follow chart. If mouth is good, simply mark across the letter "G." If fair, mark across the letter "F." If bad, mark across the letter "B." Mark the same for condition of gums. If use tooth-brush, mark across "Yes," if "No," mark the same.

Eighth. In marking diagrams, start at upper right side of mouth, which corresponds with No. 1 of the permanent teeth and letter "A" of the deciduous teeth. If a cavity is found, simply draw a line through the tooth indicated on the chart. If two or three cavities, draw two or three lines through that tooth on the chart.

Ninth. Instruments must be cleaned in soap and water and immersed in carbolic solution until needed, then dip in alcohol bath and pass over flame of lamp to dry and warm, but not hot enough to burn child's mouth.

Tenth. The blanks are to be placed in the hands of all the children, when starting the work, for them to fill in name, age, school and grade. (This will save time).



Date ....
Name ....
Age ....
School ....
Grade ....
Condition of Mouth....G........B........
Condition of Gums.....G........B........
Use of tooth brush, Yes......No......
Teeth filled, Yes......No......
Mal-occlusion, Yes......No......

Nationality.

American..................................
English..................................
German..................................
Irish..................................
Italian..................................
Russian..................................
Polish..................................
Slavish..................................
Bohemian..................................
Austrian..................................
French..................................
Swedish..................................
Norwegian..................................
By............................D. D. S.
Examiner.

After allowing for the faulty work done through the above explained misinterpretation of instructions, and after going over every examination blank to find the number of mouths showing no defect, the committee report that practically 97% of the pupils of the public schools are in need of either instruction in the use and care of the mouth and teeth, or require actual dental service to render the oral cavity healthy and capable of performing its full physiological function. The condition found in these schools is mild as compared to the condition that would be found could an equal number of the representative adult citizens of this city be examined.

The condition is so appalling, and the rapidity with which it is growing worse is so alarming, that those who have given the subject the most thought and consideration feel that the only possible way to meet and resist this "disease of the people"—caries of the teeth, is by general public instruction in the care and use of the mouth and teeth. The public school system of the city offers the best opportunity to spread both knowledge and training in this direction and to show the great value of such care and attention from an economic standpoint.

We, therefore, petition your Honorable Board of Education as follows:

1. That you permit us to place through your Board, in each school, a competent dental inspector who shall make a careful and complete report of conditions together with recommendations as to needs of the pupil, and furnish copies of records with one each for the parents, the school authorities and the dental societies.

2. We desire your sanction to establish four centrally located clinics, where the indigent poor may receive proper care and treatment.

3. We would particularly desire to establish in connection with one school (preferably Marion) a clinic where all the pupils *could* receive care and treatment necessary to place all mouths in as perfect a hygienic condition as possible. (Object to show the

increased working capacity of the pupil and the diminished tendency towards infection and contagion.)

4. We seek the privilege of establishing a series of practical and illustrated talks (using lantern and other necessary aids) to be given in the assembly rooms of the various buildings. Such talks to cover the question of the importance of the teeth, their care and use, *particularly their* USE and why they should be used, the kinds of food and the attention they should receive in the mouth. These talks to be given for the benefit of the parents, teachers and pupils in the various schools.

In return for the above privilege, the societies above mentioned agree to furnish suitable equipment and supply competent operators for each clinic, and to establish and conduct the system of short talks and demonstrations for one year, free of any expense to the Board of Education or the State of Ohio. The members of our profession realizing the gravity of existing conditions, are making this proposition from a purely altruistic standpoint.

OBJECTS

1st. To show the general public conditions as they actually exist.

2nd. To show that by proper instruction and care of the mouth, that from 50 to 75% of the illnesses among school children will be eliminated.

3rd. That with the mouth and teeth in perfect condition and the food properly cared for while in the mouth, the working efficiency of each pupil will be increased from 50 to 200% (according to Horace Fletcher).

4th. To secure data which will cause the State to establish and maintain such inspection and care as will insure the best possible working efficiency in our schools.

5th. To secure data and solicit the support of the public in checking and stamping out a condition which is fast undermining the life and health of the nation, a condition, which, if the dental profession was doubled and trebled many times, there would not be enough members to handle it.

Trusting that you will grant our petition and thus set Cleveland Schools and Cleveland in the foreground of this great reform work, we are

Most respectfully,

National Dental Association,
W. G. Ebersole,
Chairman Oral Hygiene Committee.
Ohio State Dental Society,
W. T. Jackman,
Chairman Oral Hygiene Committee.
Cleveland Dental Society,
W. G. Ebersole,
J. R. Owens,
W. A. Price,
Educational and Oral Hygiene Committee.

After a tremendous amount of work and performed under difficulties which seemed insurmountable, the Committee secured the unanimous adoption by the Board of Education of the resolution which was presented to you at our last meeting, which reads as follows:

No.———

Mr. Sayle.

Resolved, By the Board of Education of the City School District of the City of Cleveland, that the position of the National Dental Association, the Ohio State Dental Society and the Cleveland Dental Society, asking permission to make dental examinations of all pupils in public schools for one year, beginning January 1st, 1910, be granted.

2nd. That they be permitted to establish four centrally located clinics where children who cannot pay for the services may be cared for, free of charge, the need of free service to be vouched for by the parent or guardian and teacher on a properly worded card.

3rd. That the request for the use of school buildings for talks to parents, teachers and children upon the importance of the proper care and use of the oral cavity, the influence of proper mastication, that the best results may be procured from a nutritive, digestive, hygienic and economic standpoint, be granted, and that the supervision of these talks be placed in the Social Center Committee.

4th. That the petitioners shall furnish all equipment, material and service, and that no financial obligation shall fall upon the Board of Education, except the supply of properly lighted rooms with water, gas and electric connections.

5th. That all arrangements for carrying out these resolutions be placed under the Director of Schools, and that a report of results be filed by said dental association with the Board of Education January 1st, 1911.

W. D. Sayle, *Chairman.*
G. C. Ashmun,
J. C. Canfield.
Committee.

The above report was received, the recommendations of the Committee endorsed and instructions given to prepare and present to the society plans for the execution of the work.

The Committee then asked that a committee of fifteen men be appointed to act with and under the committee of three in the preparation of these plans, and the following men were appointed:

Dr. Henry Barnes,
Dr. W. Q. Bissell
Dr. W. T. Jackman,
Dr. M. D. Neff,
Dr. W. A. Siddall,
Dr. Chas. K. Teter,
Dr. G. H. Wilson,
Dr. D. H. Ziegler.
Dr. Ira W. Brown,
Dr. J. W. Culver,
Dr. T. B. Johnson,
Dr. E. L. Pettibone,
Dr. J. F. Stephan,
Dr. S. M. Weaver,
Dr. W. H. Whitslar,

These with members of Education and Hygiene Committee, Drs. W. G. Ebersole, J. R. Owens and W. A. Price, made a committee of eighteen men.

Later the committee of three asked that the entire Executive Committee of the Society be added to the sub-committee.

The request received the endorsement of the large committee, and Drs. Frank Acker, J. T. Newton, W. S. Sikes, H. R. C. Wilson were included and responded to the call, making a committee of twenty-two.

(*To be continued.*)

> TO lay aside all prejudices is to lay aside all principles. He who is destitute of principles is governed, theoretically and practically, by whims.
>
> *Friedrich Jacobi.*

REPORT OF COMMITTEE ON DENTAL HYGIENE AND ORAL PROPHYLAXIS*

By G. C. Bowles, D. D. S., Chairman, Detroit, Mich.

THESE are progressive times. Among the standing committees authorized by the new constitution adopted by this society in June, 1907, was the committee on Dental Hygiene and Oral Prophylaxis, perhaps the first committee of the kind so authorized in this country.

Its duties were defined as follows:

This committee shall consist of three members, the chairman to be a member of the Executive Council. In addition to such other duties as may naturally fall to it, the committee shall constitute itself a bureau of information on the subject of the education of the public in Dental Hygiene and Oral Prophylaxis. It shall collect for reference, and when feasible, for distribution, such reports, lectures, papers, charts, etc., as may aid those engaged or wishing to engage in this educational movement, or in the establishment of *free dental clinics* for the unfortunate found in every community, also for those in our charitable and penal institutions. The committee shall report annually.

These duties were adopted on motion at the last annual meeting, and fortunately, have not yet been incorporated in the printed constitution. Before so appearing they should be amended. "In addition to such other duties as may naturally fall to it," is broad enough, but not sufficiently explicit or mandatory. The committee has observed the command to collect for reference, etc., information relating to the popularizing of the subject of Dental Hygiene and the establishment of free dental clinics, but it has done nothing toward creating a demand for this information in the state at large. The committee has been passive, due to the chairman's misinterpretation of his duties. If we are to keep abreast of this movement, to say nothing of leading, this committee must become intensively aggressive. Already other states, notably Massachusetts, through its Dental Hygiene Council, and New York, following Massachusetts' lead, are pointing the way.

The Dental Hygiene Council of Massachusetts was organized in December, 1907. Its purpose is "To educate the public as to the necessity of keeping the teeth and mouth clean and healthy; to inspire general interest in saving the teeth—the much neglected organs of nutrition; to promote the control of tuberculosis and other infectious diseases; to establish dental inspection as part of medical examination in schools."

The work of the council is a campaign of education through literature —it issued nine publications the first year and of one of these, "The Care and Use of the Teeth," it has distributed fifty thousand through exhibitions--it maintains a traveling Dental and Oral Hygiene Exhibit illustrating the importance to good health, of a clean mouth and well cared-for teeth, and through popular talks by dentists and physicians. In Boston in January last, it held a four-day state conference. The public was invited to an open discussion on dental hygiene, to determine how best to further the popular movement for better care of the mouth and teeth. A very fine program was prepared.

---

*Read before the Michigan State Dental Society, June, 1909.

Why are they doing all this? Because 96 per cent. of school children have decayed teeth, and as they state, "There is not a single thing more important to the public in the whole range of hygiene than the hygiene of the mouth."

The same conditions and the same call to organized concerted action exist in Michigan. What are we going to do about it?

The First District Dental Society, during the past year, has taken up one phase of the problem and has prosecuted it with intelligence and vigor. It has worked out a plan for the examination of the teeth of school children and for the establishment and operation of a free dental clinic, which Dr. William A. Giffen, the tireless and enthusiastic chairman of the committee, declares to be working to absolute perfection.

For the purpose of collecting data and developing a system, the work this year has been confined to the pupils of one school, chosen because of its representative character.

Three hundred and five children were examined. Of 6 per cent. of these the oral hygiene was marked good; of 40 per cent. it was fair, and of 34 per cent. it was bad. Of the whole number 5, or about 1½ per cent, had no need of dental attention. Thirteen hundred and thirty-four cavities were found, or about 4½ per child. To 229 of these children offers of free dental service were extended. One hundred and twelve attended the clinics; for them 266 fillings were inserted, 100 roots and broken down teeth were extracted, 64 roots were treated, and 135 prophylaxis treatments given.

All were given instruction in the proper care of the teeth, and in addition each received a tooth brush and a can of tooth powder, all free of charge.

On June 24, when the second examination was made, only 229 of the original 305 pupils were available, but the examiners found the principal and teachers enthusiastic and the oral hygiene of the pupils very greatly improved. The first examination showed: Oral Hygiene of 6 per cent., good; 40 per cent., fair; 34 per cent., bad; 4½ cavities per child. The second examination showed: Oral Hygiene of 31 per cent., good; 57 per cent., fair; 11 per cent., bad; 2½ cavities per child.

The entire equipment for this work cost something less than $150.00.

Two second-hand chairs were loaned by the dealers. Two second-hand engines were purchased. Instruments and supplies were furnished by the dealers at a reduction of 25 per cent. For the courtesy and generosity of the local dental dealers in this matter the thanks and appreciation of the committee and the profession at large is due.

Twenty-five dollars will cover the entire cost of filling materials, burs, tooth brushes and tooth powder used to date.

This initial effort, confined to one school term, has accomplished splendid results and in every way has made a most encouraging showing. The bulk of the work and the responsibility has fallen upon the broad and willing shoulders of Dr. Giffen, who has personally directed the examinations and the operations, and performed a goodly share of them himself. He has had a number of able lieutenants, however, of whom Dr. Grace P. Rogers, Drs. Wood and White should be mentioned.

An all-day clinic was held every Saturday, at which time four volunteers, members of the First District Dental Society, took care of the little patients. The funds for carrying on the work were raised by a five-dollar contribution made in lieu of service at the clinic by those members of the society who preferred to aid the cause in this way. Of course both service and contributions were entirely voluntary.

Predictions of disaster, of the awakening of jealousy and of accusations of personal motives on the part of those actively engaged in the work have not been realized. Harmony and good feeling prevails. Of course, all has not been smooth sailing, but the obstacles encountered have only given zest to the effort.

Work of this character is entirely altruistic in its motives, nevertheless it is educational in its outcome and will redound ultimately greatly to the benefit of the dental profession and in more ways than by merely increasing the demand for dental service.

The experience of the Detroit Committee will be of great service to others wishing to engage in this work. It is probable that at least half a dozen similar clinics might well be established in this state during the coming year. It is certain that a campaign of education along the lines adopted by the Dental Hygiene Council of Massachusetts should be started immediately. Such a work will require funds. Dr. Giffen suggests that these be raised through royalties from the sale of an official tooth powder and a mouth wash put up after formulas authorized and endorsed by this society, the product to be manufactured and marketed by some reliable pharmaceutical house and the demand to be created by the recommendations of the members of the society, who would thus be recommending a product of which they know something, and at the same time furthering a most worthy cause. This proposition, if there are no business, ethical or legal objections to it, ought to furnish abundant means to carry on a highly efficient campaign of popular education along the lines suggested.

In the meantime a local committee on Oral Prophylaxis and Dental Hygiene should be appointed in each society of the state to take up this work in conjunction with the central committee. This topic might be made the subject of the papers for the first meeting in the fall, and interest and enthusiasm awakened in the cause. Copies of "The Care and Use of the Teeth," or a similar pamphlet, should be purchased or published by the central committee, to be supplied to the local secretaries and to individual dentists at cost, these to be distributed where they will do the most good. And most important of all, each man must awaken to his own responsibilities and opportunities, and begin the educational movement in his own office and community. As soon as possible a talk on "The Teeth and How to Care for Them" should be written and lantern slides illustrating it prepared, this to be the property of the State Society and loaned to the component societies as desired. It might be well for the society to purchase a lantern as well. Ultimately some form of organization for promoting this work must be effected. A plan of organization was presented to the New York State Society at its annual meeting in May. The plan appears cumbersome, but may be effective.

It is the recommendation of this committee that its successor be authorized and instructed to begin an active campaign in this educational movement, that it be authorized to expend not to exceed fifty dollars of State Society funds for the purchase or the publication of literature designed for this end, the same to be distributed pro rata to those component societies willing to engage in the work. By this it is not intended to limit the activities of the committee in any way, but rather to authorize one definite thing done. This is an important subject and we trust that time may be found for its careful consideration at this meeting.

Committee,
Grace P. Rogers,
Wm. A. Giffen,
G. C. Bowles,
Chairman Committee.

DENTAL LAW INFORMATION

Having had many inquiries from subscribers regarding exchange of license and requirements to practice in different states, the editor of The Dental Summary recently addressed a personal letter to the Board of Dental Examiners in every state and territory in the United States for information regarding its requirements. The following questions were asked:

(a) HAVE YOU A RECIPROCITY CLAUSE IN YOUR LAW?
(b) IF SO, WITH WHAT STATES DO YOU EXCHANGE LICENSE?
(c) ON WHAT CONDITION CAN A LEGAL PRACTITIONER OF DENTISTRY IN SOME OTHER STATE OBTAIN A LICENSE TO PRACTICE IN YOUR STATE?
(d) WHAT IS THE SENTIMENT OF THE MEMBERS OF YOUR BOARD, AND OF THE PROFESSION OF YOUR STATE, REGARDING RECIPROCITY?

The following answers were received and we desire to thank the secretaries of the various boards for their prompt and business-like responses.

We have given the names and addresses of secretaries that any reader who may desire further information may know to whom to write.

ALABAMA.

(a) We have not.
(b) None.
(c) By passing the required examination.
(d) The Board is unanimously in favor of reciprocity.

Secretary, T. P. Whitby, Selma, Ala.

ARIZONA.

(a) No.

(b) None.

(c) Only by passing a satisfactory examination.

(d) Don't want it.

Secretary, W. P. Sims, Bisbee, Ariz.

ARKANSAS.

(a) No.

(b) None.

(c) Examination only, and must make a general average of 75 per cent.

(d) Is somewhat divided.

Secretary, A. T. McMillin, Little Rock, Ark.

CALIFORNIA.

(a) No.

(b) None.

(c) On condition that he pass a successful examination before the Board of Dental Examiners of California.

(d) No answer given.

Secretary, C. A. Herrick, San Francisco, Cal.

COLORADO.

(a) No.

(b) None.

(c) The only condition upon which a practitioner can obtain a license is to present his diploma and submit to an examination.

(d) The sentiment of the board is in favor of reciprocity, if the applicant comes properly recommended, by his home state society, state board, etc. But some think that this would give the board too much power to say that we will grant this man a license and accept his credentials, and then examine the other fellow. I believe as a whole the members of the profession are opposed to reciprocity. I personally would like to see a good clause to that effect. We tried to have a new dental law passed by our last legislature but it did nothing absolutely, and our bill died in committee after passing the House without change.

Secretary, Mallory Catlett, Denver, Col.

CONNECTICUT.

(a) Yes.

(b) Compact has been made with none.

(c) By passing the examination of the board.

(d) We have never granted a license without an examination, but we feel that the time has come when under certain conditions we should do so. The Commission are now considering just what stand we shall take and at our next meeting shall probably arrive at some conclusion.

Secretary, Gilbert M. Griswold, Hartford, Conn.

DELAWARE.

(a) No.

(b) None.

(c) As our law reads, no one gets a certificate to practice except by passing the Board of Examiners.

(d) It has not been much voiced, but I believe the sentiment is becoming favorable to it.

Secretary, C. R. Jefferis, Wilmington, Del.

DISTRICT OF COLUMBIA.

(a) Yes.

(b) New Jersey, Iowa, Ohio, Kansas.

(c) With those states with which we have reciprocity, the requirements are that the applicant shall have been five years in practice and be a member of the state or local Dental Society, and be recommended by the Dental Board.

The law makes it discretionary with the Board as to whether an examination will be required.

We will make reciprocal exchange with states having a high requirement of standing, as compared with the three states above named.

(d) The prevailing sentiment of the profession is that a person qualified, and of good moral character. should occasion arise necessitating his or her removal to another State or Territory, that such should be registered upon a certificate from his State Board.

Secretary, Chas. W. Cuthbertson, 309 7th. St. N. W., Washington, D. C.

FLORIDA.

(a) No.

(b) None.

(c) By taking regular examination as others take it.

(d) The sentiment here is opposed to this idea.

Secretary, W. G. Mason, Tampa, Fla.

GEORGIA.

(a) No.

(b) None.

(c) He must stand examination in theory and practice.

(d) My observation has been that it is not favorable.

Secretary, D. D. Atkinson, Brunswick, Ga.

ILLINOIS.

(a) Yes.

(b) Ohio, Indiana, Michigan, Wisconsin, Iowa, Kansas.

(c) The State Board of Dental Examiners may, in its discretion, issue a license to practice dentistry or dental surgery without examination to a legal practitioner of dentistry or dental surgery, who removes to Illinois from another state or territory of the United States, or from a foreign country, in which he or she conducted a legal practice of dentistry or dental surgery for at least five years immediately preceding his or her removal: *Provided*, such applicant present a certificate from the Board of Dental Examiners, or a like board, of the state, territory or country from which he or she removes, certifying that he or she is a competent dentist or dental surgeon, and of good moral character: *And, provided, further*, that such certificate is presented to the Illinois Board of Dental Examiners not more than six months after its date of issue, and that the board of such other state, territory or country shall in like manner, recognize certificates issued by the Board of Dental Examiners of the State of Illinois, presented to such other board by legal practitioners of dentistry or dental surgery from this State, who may wish to remove to or practice in such other state, territory or country.

(d) Favorable to reciprocity.

Secretary, T. A. Broadbent, Venetian Bldg., Chicago, Ill.

IDAHO.

(a) Yes.

(b) Utah, at present but will have all signed up with Montana by the fore part of January, 1910.

(c) By examination only except exchange with Utah and Montana. Fee $25.00 in all cases. Must present a diploma from Dental College in good standing, or license from some other State Dental Board, or furnish proof of having been engaged in dentistry for at least four years.

(d) Favorable with all the States West of the Rockies, but under the present conditions it is not for the best interest to do so with the other states.

Secretary, J. B. Burns, Boise, Idaho.

INDIANA.

(a) Yes.

(b) Ohio, Michigan, Illinois, Nebraska, Iowa, Minnesota, Montana, New Jersey.

(c) He must have been in legal and ethical practice in the State from which he is applying for 5 years; must have the recommendation of the Board of that State and a certificate of membership in the State Dental Association.

(d) The Indiana law was probably the first to contain a reciprocity clause and the Board has always favored it.

The profession generally in Indiana have long been favorable to such arrangements.

Secretary, F. R. Henshaw, Indianapolis, Ind.

IOWA.

(a) Yes.

(b) Vermont, New Jersey, District of Columbia, Tennessee, Nebraska, Kansas, Oklahoma, Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota.

(c) Must have a diploma and pass an examination or must have had five years practice in a state that interchanges with Iowa.

(d) The Board favors reciprocity and I think the profession, in general.

Secretary, E. D. Brower, Le Mars, Ia.

KANSAS.

(a) Yes.

(b) District of Columbia, Iowa, Illinois and Minnesota.

(c) By passing the required examination, unless coming duly endorsed from one of the states enumerated above. With District of Columbia and Iowa we have absolute reciprocity; and with Minnesota and Illinois the candidate would be required to pass a practical examination.

(d) Favor reciprocity.

Secretary, F. O. Hetrick, Ottawa, Kan.

KENTUCKY.

(a) No.

(b) None.

(c) Satisfactory examination by the Board.

(d) Favorable.

Secretary, J. H. Baldwin, 305 Broadway, Louisville, Ky.

LOUISIANA.

(a) Yes.

(b) None as yet.

(c) By passing our State Board.

(d) Appear to favor it.

Secretary, V. K. Irion, New Orleans, La.

MAINE.

(a) No.

(b) None.

(c) Only by taking examination.

(d) Personally I am much in favor of it. One or two other members are somewhat favorably disposed, but the Board as a whole has always voted against it.

Secretary, Dana W. Fellows, Portland, Me.

MARYLAND.

(a) We have a discretionary clause which may be used in the cases of old practitioners of undoubted ability and ethical standing.

(b) No interchange with any other State.

(c) By passing the usual examination.

(d) The members of our Board are opposed to it under present existing conditions.

Secretary, F. F. Drew, Baltimore, Md.

MASSACHUSETTS.

(a) No.

(b) None.

(c) By taking our examinations.

(d) The members of our Board having full powers under our law, do not make it a hardship for any worthy practitioner to comply with our law.

Secretary, G. E. Mitchell, Haverhill, Mass.

MICHIGAN.

(a) Yes.

(b) Iowa, Minnesota, Montana, Wisconsin, Illinois, Ohio, Indiana, Pennsylvania, and New Jersey.

(c) Only by passing Board.

(d) Favorable.

Secretary, A. B. Robinson, Grand Rapids, Mich.

MINNESOTA.

(a) Yes.

(b) Michigan, Indiana, Iowa, Nebraska, Montana, Wisconsin, Kansas.

(c) If a dentist has practiced legally in any of the above states for five (5) years or more he will furnish affidavits as follows:

(1) From the Board of the state licensed in.

(2) From two practicing dentists of the state.

(3) From two freeholders at your last residence in the state. Certifying to the above facts and your moral character and professional attainments.

Blanks will be furnished by the Board.

Also you will be required to

(4) Prepare cavity and make one gold filling.

(5) Prepare cavity and make one amalgam filling.

(6) Prepare root and make one crown.

A passing grade of 85 per cent is required before license is issued.

Applicants from other states must present a diploma from a recognized college and then take both, a theoretical and practical examination.

(d) They are in favor of it providing it is according to the *Minnesota Plan.*

The Minnesota plan is to exempt those from states that we have reciprocity agreements with from the theoretical examination, but they have to take the practical examination. That plan is one that we evolved ourselves and where it has been tried out they do not care for any other method.

Secretary, Geo. S. Todd, Lake City, Minn.

MISSISSIPPI.

(a) No.

(b) None.

(c) By passing the required examination.

(d) Don't want it.

Secretary, L. B. McLaurin, Natchez, Miss.

MISSOURI.

(a) No.

(b) None

(c) Oral and practical examination.

(d) Very much divided. Some favor it in unlimited form, some by practical examination alone, many favor the method we use.

Further information gladly furnished any time.

Secretary, S. C. A. Ruby, Clinton, Mo.

MONTANA.

(a) Yes.

(b) Michigan, Indiana, New Jersey, and Minnesota.

(c) Full examination if from states we have no interchange with. Practical examination required in all cases whether exchange or not. Examination only held once a year. Second Monday in July. Probably no special examination.

(d) We are corresponding with a few other States relative to exchange.

Secretary, D. J. Wait, Helena, Mont.

NEBRASKA.

(a) Yes.

(b) Iowa, New Jersey, Indiana, Minnesota, Montana (and several other states ready to sign up).

(c) Reciprocity and by taking regular examination.

(d) Nebraska Board is strong for reciprocity.

Secretary, H. C. Brock, North Platte, Neb.

NEVADA.

(a) No.

(b) None.

(c) Only by passing the examination given by the Board.

(d) In general, are in favor of reciprocity with all States having a high standard.

Secretary, W. W. Goode, Carson City, Nevada.

NEW HAMPSHIRE.

(a) No.

(b) None.

(c) Only by an examination by the Board of Registration in Dentistry.

(d) Both, I think, are in favor of reciprocity for those who should have that privilege.

Secretary, A. J. Sawyer, Manchester, N. H.

NEW JERSEY.

(a) Yes.

(b) Ohio, Indiana, Nebraska, Iowa, Michigan, Vermont, District of Columbia, Utah, Montana, Tennessee.

(c) By examination or compliance to the strict letter of the following section:

Sec. 6. "Said board shall register as licensed dentists, and, under its seal and the hand of its president and secretary, issue to all persons who shall successfully pass said examination, its license to practice dentistry in this state; the board may also, without the examination herein above provided for, issue its license to any applicant therefor who shall furnish proof satisfactory to it that he has been duly licensed after examination to practice dentistry in any state after full compliance with all the requirements of its dental laws; *provided, however*, that his professional education shall not be less than that required in this state; every license so given shall state upon its face the grounds upon which it is granted, and the applicant may be required to furnish his proof upon affidavit; fee for such license shall be twenty-five dollars."

(d) Favorable.

Secretary, C. A. Meeker, Newark, N. J.

NEW MEXICO.

(a) No.

(b) None.

(c) By taking the examination and making the required per cent and must present at the time of examination his diploma from a reputable college.

(d) The sentiment as far as I have heard, is favoring reciprocity.

Secretary, M. J. Moran, Deming, N. M.

NEW YORK.

(a) Yes.

(b) Pennsylvania and New Jersey.

(c) Can take our practical examination and have our state regents certificate, or, after six years practice apply to our state regents for certificate to practice under the *six year* clause in our law.

(d) Favorable.

Secretary, A. H. Holmes, Morrisville, N. Y.

NORTH CAROLINA.

(a) No.

(b) None.

(c) By passing our examination and receiving license which must be registered in county in which he or she practices.

We grant a temporary license upon passing examination before one member of Board—good only until next regular meeting of Board.

(d) I am inclined to believe that sentiment is in favor of reciprocity. Personally, I am heartily in favor of it.

Secretary, F. L. Hunt, Asheville, N. C.

NORTH DAKOTA.

(a) No.

(b) None.

(c) By examination. No license issued unless applicants pass examination.

(d) Not in favor, unless we could have it with all the states.

Secretary, H. L. Starling, Fargo, N. D.

OKLAHOMA.

(a) No.

(b) None.

(c) Taking examination.

(d) Not much in favor of it.

Secretary, A. C. Hixen, Guthrie, Okla.

OHIO.

(a) Yes.

(b) New Jersey, District of Columbia, Indiana, Illinois, Michigan, Iowa.

(c) Five years of continuous, legal and reputable practice in the state from which applicant desires to remove, next prior to making application for license in Ohio. Applicants from or to New Jersey, District of Columbia and Indiana must be members of state or local dental society. Applicants from all states except District of Columbia are required to pass a clinical examination.

(d) Entirely favorable. The Board is limited by the law to interchange with those states which maintain an equal standard of requirements for license. The law in Ohio exempts none from examination (except by interchange) and only graduates of reputable dental colleges are eligible for examination. Hence our field for the mutual interchange of licenses is limited.

Secretary, F. R. Chapman, Schultz Bldg., Columbus, Ohio.

OREGON.

(a) No.

(b) None.

(c) By taking the examination.

(d) The members of the Board and profession are very much in favor of reciprocity. But will have to amend the law.

The new features of our present law are raising the fee from $10.00 to $25.00 and a yearly fee of $1.50.

Secretary, H. H. Olinger, Salem, Ore.

PENNSYLVANIA.

(a) Yes.

(b) New York and Michigan.

(c) By having satisfactory credentials and satisfying the Board of his ability by an oral examination, principally on practical subjects.

(d) The Board is almost an entirely new one but I think they will all favor reciprocity in a carefully guarded way.

Secretary, G. W. Klump, Williamsport, Pa.

RHODE ISLAND.

(a) No.

(b) None.

(c) By coming before the Board for examination.

(d) Theoretically, all feel that it is desirable; practically, most of us feel that it is difficult to attain.

Secretary, Harry L. Grant, Providence, R. I.

SOUTH CAROLINA.

(a) No.

(b) None.

(c) By appearing before Board at annual meetings of Board and proving himself a worthy ethical practitioner and a graduate of a reputable dental college.

(d) We have three new members on the S. C. Board whose views of reciprocity I do not know. The other two would not favor a plan to encourage ''tramp dentists'' but would welcome high-toned ethical dentists to our state. Can not speak for the entire profession.

Secretary, B. Rutledge, Florence, S. C.

SOUTH DAKOTA.

(a) No.

(b) None.

(c) By examination in practical and theoretical dentistry only.

(d) It seems to be against exchange with middle and eastern states, but is more favorable to western states.

Secretary, G. W. Collins, Vermilion, S. D.

TENNESSEE.

(a) Yes.

(b) New Jersey and Iowa.

(c) Presentation of diploma from a reputable dental college, and examination in all branches taught in dental colleges.

(d) Favorable.

Secretary, F. A. Shotwell, Rogersville, Tenn.

TEXAS.

(a) No.

(b) None.

(c) The same as any other applicant. An examination one half in theoretical, one half practical work, giving the student and old practitioner an equal chance.

(d) The Texas Board is unanimously *opposed* to reciprocity.

The profession in Texas is largely *against* reciprocity, from 75 to 90 per cent *against* reciprocity.

Secretary, Bush Jones, Dallas, Texas.

UTAH.

(a) Yes.

(b) New Jersey and Idaho.

(c) Regular unless from the above states. We allow credits for five or more years' practice.

(d) Not very favorable on account of great number coming this way and none going east. It's a case of all coming in and none going out.

Secretary, A. C. Wherry, Salt Lake City, Utah.

VERMONT.

(a) Yes.

(b) With New Jersey and Iowa.

(c) Applicants from any state except New Jersey and Iowa must pass the regular examination.

(d) No reply.

Secretary, J. H. Jackson, Burlington, Vt.

VIRGINIA.

(a) No.

(b) None.

(c) By standing the State Board examinations.

(d) Favorable, and we wish very much that it could be brought about.

Secretary, J. P. Stiff, Fredericksburg, Va.

WASHINGTON.

(a) No.

(b) None.

(c) Only by taking the examination required by the Board of Examiners. The examinations are in theory, operative and prosthetic dentistry.

(d) Cannot say as no action has been taken on this important topic to my knowledge.

Secretary, W. B. Power, Seattle, Wash.

WEST VIRGINIA.

(a) Yes.

(b) Have no arrangements as yet with any states.

(c) Until such arrangements are made they would have to take the regular examination.

(d) We do not at the present time think it would be of any benefit to our state, but we had it embodied in our law, so that we could put it in operation at any time we thought it prudent to do so.

Secretary, J. F. Butts, Charleston, W. Va.

WISCONSIN.

(a) Yes.

(b) New Jersey, Illinois, Michigan and Minnesota.

(c) By passing the required examination.

(d) We are all in favor of reciprocity.

Secretary, C. S. McIndoe, Rhinelander, Wis.

WYOMING.

(a) Yes; but we do not recognize it.

(b) None.

(c) By an examination before the Board.

Resolved, that after all papers are impartially graded, not considering the individual but considering only the worth of his papers and practical work, that five points credit be given for every five years of honorable, ethical, legal practice of dentistry, and one point for each succeeding year of honorable practice thereafter.

Any one wishing to avail themselves of this credit must come with a recommendation from their State Board and State Society.

(d) The Board members are not in favor of reciprocity, and as for the rest of the profession of the state I cannot say.

Secretary, Peter Appel, Jr., Cheyenne, Wyo.

THE·SUCCESSFUL DENTIST

THE DENTAL OFFICE AND SURROUNDINGS

By W. H. Whitslar, M. D., D. D. S., Cleveland, O.

WITH the material advancement of the world's progress, the dental profession has made great strides in the past few years. It is difficult to look into print without seeing some reference made to teeth or dentistry. People now recognize more than ever the value of their teeth and proper mastication. This all conspires toward the betterment of humanity. The dentist therefore prepares himself in a school of dentistry and at once sets out to find a community in which he may dwell and become a citizen as well as a practitioner of dentistry. He first seeks a location for his office, then provides an equipment. The location of an office depends upon several conditions. Custom in some places imposes the location of the office in a residential portion of the city, whereas generally offices are usually found in the business districts. When found in both parts, those in the residence district are often of one who has acquired a satisfactory practice and leans toward greater privacy than in business communities. In cities where a number of dentists are congregated in a large building the element of transient business or practice amounts to little, and so the practice becomes more private in its character. When a practice is established the location is of little concern to the patient, providing it is accessible, for having received conscientious service previously, one will go a long way to have the same treatment. On the other hand, the location oft proclaims the man, for it denotes his aims towards classes of people, and it puts him in the way of their seeking. He should, however, be situated in a manner that indicates his modesty as a professional gentleman. Large signs upon the front of the building or even its windows are vulgar, depreciating the high standard the dentist aspires to, but a neat lettering of his name upon the door of his office is appropriate and sufficient. One should remember that the practice which remains with the practitioner is that acquired by his skill. In the main, the dentist himself is the central figure in the case and about him all converges. Every article in his office proclaims the man, giving evidence of his love for the profession and desire to be prepared for his work. To be sure we may see elegant mechanical work performed in a meagre or even slovenly office, but satisfaction to one's self and particularly to his patients is gained by recognizing the requirements of cleanliness. Cleanliness of person and office will attract patients. Luxurious furniture is not required to indicate a tidy office.

Specifying the equipment of the office we begin as the door is entered. The reception room first meets the gaze of the patient who observes it as a whole, then the contents are individualized. An attractive room is of importance since it provides a waiting place which should be made as cheerful as possible. A large room is unnecessary, for patients should not be required to wait for an appointed time to arrive. It is an annoyance to have people waiting.

The arrangement of this room depends upon the taste of the dentist. Inasmuch as he has to spend the most of his waking hours in his office he is entitled to have such a place homelike, and he is not blamable if he indulges in some extravagances in furnishings. These should not be excessive or better than he has in his own home, which should be the best he can afford. Some prefer very plain furnishing, but a happy medium is desirable. Aside from a few chairs, a stand, and perhaps a bookcase or case for curios, all other furniture is extra. If so inclined, a collection of geological specimens, art souvenirs, antiques of various kinds, miniatures, or almost an endless variety of curios which can indulge the mind of the dentist as a side study, will often afford a pleasant conversation with the patient and enlarge the vision of both. A few pictures of a quiet nature may adorn the walls. Photographs of assembled dental conventions are excellent remembrances and are appropriate for the office. A dentist whom I know, successful with children as well as with grown people, has the ceiling and wall in front of the operating chair covered with various pictures to amuse and interest while operating. These divert the mind and lead to successful handling of the patient.

A word about the literature left upon a stand or table in the reception room: Much reading is not necessary. Aim to please the patrons and subscribe to their enlightenment by providing well and regularly if periodicals are used. Overlooking the needs of children is a mistake. All persons like pictures. Well selected cartoons as ''Funny Folks'' by F. M. Howorth is of a variety commendable. In the office of a successful dentist in New York, whose ability to handle children is well known, I noticed four or five little books only on his stand. These were children's stories of the best quality. He undoubtedly knew these stories thoroughly and talked them over with the children. In another office in Chicago I saw twenty monthly popular magazines as an attraction for parents as well as children. Both men are successful with children, but their methods are different. To reach grown people I observed in the office of a well-known writer, a number of dental journals dating back several years. These contained articles he had written and they were marked both inside and out to call attention to his articles. No matter what his object may be, articles in dental journals are too technical, as a rule, for the laity. They are more prone to read the advertisements, note the cost of materials, make invidious comparisons with fees, and ask impertinent questions. It is better to keep dental journals for one's own reading and give instruction orally at the chair. The reception room proclaims individuality and the desire to provide comforts.

From this room to the operating room is only a step from a suitable room or place after leaving off the heavy wraps. A small retiring room is essential for ladies. The ''villainous chair'' comes now into view. An investment of all one possesses in buying the best chair is economy in commencing practice, for the lesser expenditures are more easily met as necessity demands. The entire equipment of the operating room is a study. The chair, cabinet for instruments, and engine are necessities. An electric engine and fountain cuspidor seem to me necessities now, but all other things seem to be accessory in a measure. Every dentist of experience learns that many seeming necessities occasionally become non-essential. This pertains especially to instruments and apparatus for the performance of various processes of construction. It is wise to keep in mind one word, ''Simplify,'' and try to attain all results in a simple and direct manner. A true mechanician will obtain results simply, but at the same time be prepared for emergency with the necessary implements. I do not wish to deprecate any method but to state that one may be surfeited with apparatus. Dental dealers are happily contributing to the advancement of dentistry by providing better appurtenances of all kinds. It is meat to them as well as to the better conditions of the dentist. The publishers of THE DENTAL SUMMARY several years ago inaugurated the production of high-class dental furniture, since which time greater attention is given to the office furniture. The latest development is sanitary furniture, which is both attractive and seducive. In placing white enamel furniture one should be guided by the fact that too much bright reflected light is harmful to the eyes, and, as sight is the best asset the dentist has, one has to look to this feature with no small degree of judgment. Contrive to arrange all white reflective surfaces as much as possible out of the range of vision when looking into the mouth of the patient. This is a simple but valuable rule. To have a display of all kinds of apparatus in the operating room is sometimes effective, but as a rule it is too suggestive of both pain and display. On the other hand, a reasonable display, which cannot be hidden, has its effect in securing confidence. The entire appearance of the operating room should command respectful dignity and exhibit a good equipment.

An extracting room may take on the appearance of a surgery, with white walls and enameled furniture. Here the equipment is simple and arranged for quick work. If much extracting is performed a retiring room for arrangement of dress, and if needs be, a lounge to lie upon, are needed.

The laboratory has its devotees and its size depends upon the office force and its purposes. If assistants are necessary the laboratory depends upon their number. For one person a small room with everything within reach saves time. Here again neatness can be maintained by having benches and wall-cases that provide for the storage of all things systematically. To have the wall covered with instruments hung upon nails is unsightly and not so convenient as when arranged in drawers in cases. Oak benches partly covered with Tennessee marble are easily kept clean. It is surprising how many laboratory tools, etc., can be stored in benches. In cities where rentals are high every square foot of space is valuable, hence compactness is essential in the arrangement of an office. The whole office should bear the imprint of thought, the idea being that it is to serve for dentistry. Even the walls should show care in their coloring to preserve the eyes, and at the same time be pleasing. Buff and light green are suitable shades, the color being laid on plain.

Whilst the attraction in the office is the skill of the dentist which provides his reputation, as said before, all things contained in the office, even the assistants, bespeak his temperament and ideality.

In referring to assistants I cannot close this article without paying my respects to the conscientious and effective assistant at the chair. It is her light touch, dainty care of instruments and linen, helpful expression of face to assure the patient in pain, cheerful encouragement when the dentist is tried by difficulties, and the moral tone that pervades the office in the presence of one who understands her place in the armamentarium of the office and its successful management. To such a person I cannot but feel grateful, and having such, one is fortunate.

One of the great essentials in the equipment of an office is Patience, which should be apportioned intelligently to all.

Summed up, the office and its surroundings are calculated to provide a business, or a practice, which is to conserve dental organs, thereby contributing to the support and relief of humanity.

WEALTH cannot confer greatness, for nothing can make that great which the decree of nature has ordained to be little. The bramble can be placed in a hot-bed, but can never become an oak. —*Samuel Johnson.*

MISCELLANY

A PILGRIMAGE TO THE OLD HOME OF THE LATE WILLOUGHBY D. MILLER

By Drs. E. C. Mills and H. M. Semans, Columbus, Ohio

(Continued from page 83, January Summary.)

During the twenty-eight years Dr. Miller spent in Germany he came back to the D. C. Brooks residence probably fifteen times, always in summer or early fall, during which time he collected skulls of various animals and others specimens for the purpose of studying comparative dental anatomy. Here he played golf on improvised links, took walks over the surrounding hills through woods and along the murmuring streams. He did not take much interest in the people and events of the neighborhood, nor was he especially interested in stock or farming, though when occasion required he would lend a willing hand and do that which needed to be done with neatness and dispatch. His enjoyment was more in nature, the beautiful sunsets, the moon in her splendor and the star-decked heavens.

Fig. 9.

His disposition was one of great kindness and keen sympathy; not only did the grown people and children love him, but the dogs, cats, turkeys and chickens all regarded him as their friend. (See Figs. 9 and 10.)

Whether the so-called "rest cure" would produce such permanent results as the complete relaxation here represented is questionable. Here

"* * * as free as Nature first made man,
Ere the base laws of servitude began,
When wild in woods the noble savage ran"

to Miller,

"who in the love of Nature holds
Communion with her visible forms, she speaks
A various language."

As an instance of his kindness he discovered one day a large grasshopper that in some way had lost one of its hind legs. He caught the insect, took it into the house, made and fitted a wooden leg. He made a pet of it which he kept for weeks. It seemed to use the wooden hopper about as well as the natural one.

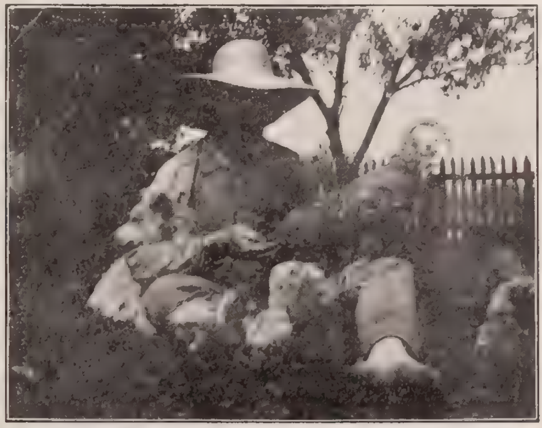


Fig. 10.

His generosity was limited only by his means. Fig. 11 is one taken after he had just come in from a little hunting trip with his two nephews and namesakes (Willoughby Bishop and Willoughby D. Brooks), and sat down in the shade to rest, and was giving them a little fatherly advice when one of the family appeared with a camera. The two boys were not as much interested in the advice as they were in the financial part, for on that occasion he gave them each one hundred dollars in money. This picture was taken about 1899. The boy on his knee is now a student in the Medical Department of the Starling Ohio Medical College, using the money to help him through college.

In hunting season he enjoyed the sport and was considered a good marksman. After such recreation he would return and shut himself in the privacy of his own room to engage in what seemed to be his consuming passion, WORK.

It was at this residence, while arranging his affairs preparatory to entering upon the duties of dean of the Dental Department of the University of Michigan, that symptoms of appendicitis developed. He was taken to the City Hospital at Newark and operated upon by Dr. Charles Stimson, of that city, but gangrene had set in and owing to the seriousness of the conditions death resulted.

Mr. D. C. Brooks, in response to a request for incidents pertaining to W. D. Miller's boyhood days, writes as follows: "I went to board with the Miller family in 1856, when Willoughby was but three years old, and was intimately acquainted with him from that time until his death. 'The boy was the father of the man.' He seemed to inherit the grace and gentleness of his mother and the energy and push and great capacity for doing things of his father. As a boy of three he was rather good looking, with his large limpid blue eyes, fair complexion and flaxen curls hanging down to his shoulders. He was rather timid, shy of strangers, and talked but little. Two years later (1858) I was teaching an ungraded district school near the Miller residence, and the little boy of five was one of my pupils. Then it was that I was much impressed with his seriousness and the earnestness with which he took hold of every task assigned him. He made rapid progress in his lessons for one so young. It was the custom for schools in neighboring school districts to have spelling contests, one school against the other. When about ten years of age the school he attended was to be

Fig. 11.

pitted against another. His teacher said to him, "Willow, we are to have a spelling match next week with Center school and they are pretty good spellers. I would like to have my school spell that one down, and as you are one of my best spellers, can you go and spell them down?' He replied: 'I will ask father about it, and if he says I can go, I'll try.' The result was from that time until the contest came, the little fellow had his spelling book in his hand almost continuously, hunting the most difficult words. After the usual evening hours of study he would retire with a candle near his pillow and his book in his hand until fallen asleep. The time came for the contest. The words went back and forth with great rapidity; one after another went down until the little boy was still standing on one side and a young lady on the other. For half an hour the contest went on between them, when finally the young lady misspelled a word and Willow spelled it correctly. The victory was won. Applause and congratulations were showered upon him, but amid it all he seemed unmoved, without a thought that he himself had been largely instrumental in the school's success, yet he seemed pleased for the teacher's sake that his school had won. Thus it was in this and many other incidents in his boyhood life that modesty and self-abnegation began to show themselves and continued with him through life."

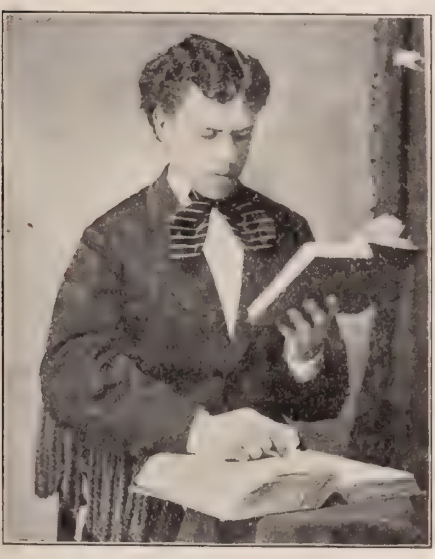


Fig. 12. W. D. Miller, 1869.

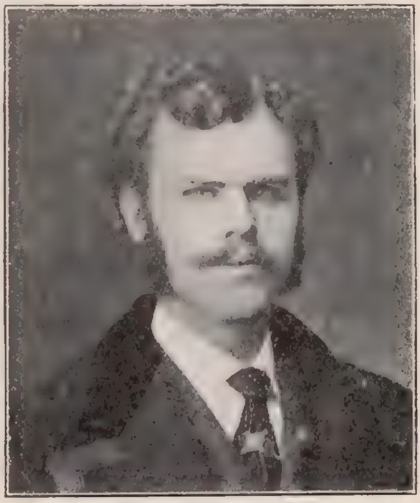


Fig. 13. -W. D. Miller, 1875, A. B. degree at Ann Arbor.

Being the youngest child of the family he naturally became the favorite, and no name seeming worthy he received the sobriquet of "Bub" until his fourth year. Having a playmate of whom he was very fond, by the name of Willoughby, in his childish lisp he styled himself "Willow," which led to his being christened Willoughby, the sound of which name was ever pleasing to him. During the presidential campaign of 1856 John

Charles Fremont, of Rocky Mountain fame, was the Republican nominee for president, and William Lewis Dayton, of New Jersey, for vice president. Dr. Miller's parents being staunch Republicans, the names Fremont and Dayton became household words in the Miller home, the latter permanently, as it eventually became the Dayton in Miller's name. He was fond of athletic sports as a boy, especially baseball, when a student in the high school at Newark (Fig. 12), and football when a student at Ann Arbor, Mich. (Fig. 13.) His enthusiasm for the former game was the cause of his having the little finger of his left hand broken.

To the southwest of his birthplace is a very large sugar grove, which was one of Miller's places of sport as a boy. On the top of the hill, just beyond stands a little white school house, the site of the Curtis school house, the one Miller attended, since rebuilt.

Two miles west of his birth place, toward Johnstown, he attended the Free Baptist Sunday School. Here he received the first tidings of the Christian faith, which, once well grounded, remained unshaken by his scientific pursuits.

*"As to Christianity," once conversing with a friend, he said, "I am fearful that they are carrying higher criticism too far, and from it will have a tendency to destroy Christianity, the hope of the world."

It was easier for him to believe that the deepest origin of man was the image of God and not an animal ancestry.

Mr. Brooks continuing states, "In the early seventies while Miller was a student at Ann Arbor he was spendng his summer vacation at our home, and it happened that the writer had an appointment to preach at a country place called Dutch Cross, some twelve miles distant. There being no church there at that time the services were held in a school house. A few days previous to the time set, owing to the condition of my throat, I advised him that I would be unable to fulfill my appointment the following Sunday, and that I would like very much to have him officiate for me. He demurred at first, but finally consented, and after a brief silence asked, 'What will be the makeup of the congregation?' I replied that it would be almost wholly of laborers, farmers and their families. For the remainder of the week his outdoor exercises were less frequent and his morning rambles shorter than usual. Sunday came, and he enjoyed the twelve-mile drive on that beautiful morning. The congregation had already assembled, and the schoolhouse, though small, was well filled. After the preliminary services I introduced him as a student from the University of Michigan, who had consented to talk to them in my stead. He slowly rose from his seat, and with a small Bible in his hand, advanced a few steps and began by saying, 'And I hope, friends, you will bear with me while I try to talk to you for a short time.' At first he spoke with some hesitancy, his face was flushed and he seemed somewhat embarrassed, but as he proceeded he became more composed and was soon mas-

---

*From papers of Mrs. D. C. Brooks.

ter of the situation, continuing his discourse for about thirty minutes. His subject was 'The Dignity of Labor,' and for his text he chose First Corinthians, third chapter, ninth verse: 'For we are labourers together with God; ye are God's husbandry, ye are God's building.' Though I have thought of his discourse many times since, I can but briefly give some of the thought expressed in that 'first sermon.' That it was best for man that he was obliged to labor, though the necessity of labor has been said to be a curse pronounced upon man in consequence of his disobedience, we ought to thank God for that curse. Every curse of God is but a blessing in disguise. Without the necessity to labor mankind would probably have, ere this, become extinct. God dignifies in that he comes to our assistance and works with us. Either consciously or unconsciously we have been working together with God in our daily occupations, more or less, all our lives. He then showed what their part and what God's part was in raising their crops of grain, and having Him as a co-partner in all our undertakings. We should give to our work, whatever nature it might be, the best care, thought and energy in us, doing whatsoever our hand finds to do, do that with our might. The last thought he wished to impress upon their minds was that we were to be co-workers together with God in the great moral uplift of mankind; and while He could have done this work Himself, for our own good, that we might share in the honor, glory and great joy that would be ours because of this work, things were so ordained. Concluding, 'Are we doing our part in this good work? Let us put ourselves in harmony with God, and give to this great cause the best that is in us.' "

(To Be Continued.)

TRUE enlightenment is that which teaches man that he is a law unto himself. True culture is that which accustoms him to obey this law without regard to reward and punishment.

—*Friedrich Jacobi.*

EDITORIAL

RECIPROCITY

RECIPROCITY enactments and exchange of license to practice dentistry in different states are of interest to the majority of dentists and each year shows progress toward a universal exchange of certificates between Dental Examining Boards throughout the United States.

In most states it has been necessary to amend the state laws in order to legalize an exchange of license, but the states are one by one falling into line.

In order to ascertain the present status of reciprocity and exchange of license, we wrote recently to the secretary of each Board of Dental Examiners in the states and territories of the United States for information, and this will be found published in this issue of The Summary.

The replies furnish some interesting data:

Twenty-three states have a reciprocity clause, in one form or another, in their laws.

Twenty-six states have, as yet, no reciprocity clause.

In twenty-seven states the Boards of Dental Examiners and the profession generally favor reciprocity.

In twelve states, reciprocity is not favored.

In five states the sentiment for or against reciprocity is divided. In three states it is reported uncertain as to whether it is favored or not, and from two states no answer was given to the question.

States that are at present exchanging certificates with other states, number seventeen. Of these Iowa leads, exchanging with thirteen other State Boards. New Jersey exchanges with ten, Michigan with nine, Indiana with eight, Minnesota with seven, Ohio with six, Illinois with six, Nebraska with five (and now arranging with several more), and other states exchange with a lesser number.

Thus it will be seen that reciprocity between states is growing in favor, and that the number of states exchanging license is constantly increasing, but slowly.

Several things are apparently retarding the progress. One is a difference in educational requirements in various laws, making it impossible for states with a low standard to exchange license with those of higher standard.

Another is the difficulty in obtaining desired legislation, either new laws or suitable amendments, so that reciprocity may be legally had with other states. Another is the feeling of opposition to the exchange of license. This sentiment seems to prevail mainly in those states where there is a tendency for many more dentists to come into the state than go from that state to another, and it may be justified at present. But in time all of these things will be righted, or we at least hope they will, and we shall have an equilibrium of standards and requirements.

And this, it would seem, is as it should be. A properly educated and legally qualified dentist practicing in one state is, from a humanitarian point of view, justly entitled to practice in any state in the union. If he serves the public proficiently in one state he can do so in another. It is akin to persecution to require such an one to submit to an examination in all the fundamentals of the science of dentistry if it happen that it be necessary for him to move to another state.

But what's the use of arguing. These matters have been discussed time and again. To come down to facts, the question resolves itself into a matter of right and justice to your fellowmen. Do you follow the golden rule? If not, look it up; learn it by heart; adopt it; practice it; and its adoption will aid in opening the way to better and more universal standards and privileges of practice throughout the United States.

DENTAL EDUCATIONAL AND ORAL HYGIENE WORK IN PUBLIC SCHOOLS

We publish in this issue a report of the Chairman of the National Dental Association and also the Cleveland Dental Society Committee on Dental Educational and Oral Hygiene work in the Public Schools.

It gives us pleasure to publish this report for a number of reasons. It shows progress in this good and much-needed work. It shows with what zeal and untiring and determined effort the Cleveland dentists obtained these privileges in the face of strong opposition.

It gives to the profession everywhere a method of procedure that will be helpful in securing like privileges and extending the knowledge of the necessity of dental and oral hygiene to the masses.

The only way to obtain legislation along the lines of dental inspection, etc., in the public schools is to show our legislators the need for such enactments.

To do this the dentists must voluntarily get permission from school boards to inspect the teeth and mouths of school children to secure statistics of the conditions as they exist, and with these statistics and organized effort just legislation ought to be obtained.

This is not a one-state affair, but a movement that is far-reaching, and the profession in one state should be able to assist another state if aid is needed. This can be done by organization.

Organization is a powerful factor, especially when dealing with political bodies, and one that should not be lost sight of in this campaign for the betterment of the dental, oral and physical conditions of our people.

It is something that appeals directly to dentists everywhere, and they must take the initiative in this great educational work. They have been inactive long enough. Others are not going to further such an undertaking if dentists themselves do nothing.

Have you organized in your section? If not, get into line and add your influence to that of the army of earnest toilers, who are sacrificing their time and increasing their energies in furthering this great educational work.

The members of the committee of the National Dental Association are thoroughly in earnest and purpose to accomplish as much as possible along these lines. The committee met in Cleveland, O., December 4, 1909, and held a meeting, the first that has ever been held in the interim between its meetings.

At this meeting the work in general was outlined and begun. One thing they want to accomplish is the establishment of chairs of Hygiene in the dental colleges throughout the United States. The National Committee is compiling information and placing it at the disposal of organizations that will work with it. It is the plan of the National Committee to assist and work with Hygiene Committees from different state societies. At the recent meeting of the Ohio State Dental Society a Hygiene Committee was appointed and consists of Dr. W. T. Jackman, Cleveland, chairman; Dr. H. M. Semans, Columbus, and Dr. S. J. Rauh, Cincinnati, and they will work in conjunction with the National Committee to establish dental hygiene on a substantial basis in Ohio. The plan is to carry on the work progressively and the campaign will be taken up through the public schools. Permission will be first obtained to examine the teeth of school children to obtain statistics; next lectures and instruction will be given the children; then clinics will be established for treatment of the teeth of the indigent poor; and then the selection, by component societies, of a dental examiner for each school and the appointment of this man by the Director of the Public Schools, which makes him a part of the school system, thus inaugurating, installing and supporting a system that makes it possible for schools to carry on the work thereafter.

These are only a few of the plans contemplated by the committees, but carried out they will certainly make a creditable beginning in this important work.

REMEMBERED

Our friends are kind to us. We received during the holiday season a large number of cards and letters bearing Christmas and New Year's greetings and take this opportunity to acknowledge their receipt.

To be thus remembered is indeed gratifying.

To know that one has friends makes life worth living. As Sydney Smith said: "Life is fortified by many friendships—to love and be loved is the greatest happiness of existence."

To those who have remembered us we return our heartfelt thanks and the wish that the new year will be a happy one for you all. Happy to many more whose happiness depends on you. So may each year be happier than the last.

PRACTICAL SUGGESTIONS

METHOD OF MAKING A CAST GOLD CROWN

By G. W. Dittmar, Chicago, Ill.

I think we ought never make an entire cast gold crown. I think it impossible to cast a gold crown in its entirety, using only wax for the whole substitute, and make a perfect crown; consequently I do it this way: I make a thimble which fits over the end of the root, using 34-gauge pure gold. Over this I make a casting of 22 K. gold as thick as is necessary to give the crown the proper form. The crown, being firm and having sufficient reenforcement of gold over the gold thimble, is one of the strongest substitutes that can be placed in a root.—*Dental Review.*

TO RELIEVE PULPITIS

By W. H. Tweedle, Pierre, S. Dakota

If you want to get a patient promptly relieved of pulpitis, counterirritate the gum tissue, over the offending tooth, and give internally 1/100 grain of nitroglycerin, in tablet form. There is nothing like nitroglycerin to relieve the blood pressure, and its effect is very rapid. Do not give the patient any of the tablets to take home. One tablet will be sufficient to get results. This treatment is especially indicated in cases where arsenic has been applied, and the patient returns with a severe throbbing toothache. The relief is almost instantaneous.—*Dental Review.*

RETENTION OF INLAYS

By Elliot R. Carpenter, Chicago, Ill.

I believe the question of retention of inlays, whether in bridge abutments or in single inlays, is largely one of cavity preparation, and that cavity preparation is a question of angles. We have no undercuts to hold; we have cement, and cement will not hold alone. There must be preparation of the cavity with angles and a flat seat -bases which will take stress without tilting or rocking the inlay out of the cavity.—*Dental Review.*

HOW TO PROTECT GOLD WORK FROM AMALGAMATION

By A. F. Donahower, Philadelphia, Pa.

Before inserting an amalgam filling in a mouth containing gold, especially if the amalgam is in close proximity to a gold filling or crown, dry the gold work and varnish it with a coat of sandarac varnish.—*Dental Cosmos.*

TO REPAIR A HOLE IN A CROWN

By M. A. Gottlieb

It often happens that we have to repair holes in gold crowns; it also happens that while we repair the perforation we are very prone to burn the rest of the crown. Again, in the process of repair, the crown may lose all its shape and usefulness. To repair a crown quickly and surely, the following method is recommended:

Fill the inside of the crown with modelling compound, cutting off the excess which passes through the hole. If the hole is large, trim the compound to the form and contour necessary, allowing for the thickness of the gold to be used. Cut off a piece of gold plate or backing No. 36 gauge, and of a size large enough to cover the area to be repaired. Place the crown in the swager, adjust the piece of gold in position, cover with a piece of rubber dam, and swage with moldine. After the piece of gold is swaged, the outline of the perforation is clearly seen. This done, the next step is to trim off the excess, remove the modelling compound from the crown, apply the piece of swaged plate to the opening in the crown, and solder in the Bunsen flame.

This method of repairing does not occupy much time, requires the least bit of solder, is certain of uniting perfectly, and finally, it restores the original contour of the crown.—*Odontologist.*

CASTING SUGGESTIONS

By J. G. Lane, Philadelphia, Pa.

In any operation of crown or bridge casting, we do not favor casting against porcelain unless there seems to be no other convenient method of attaching the porcelain. For crown work we advise the use of any suitable loose-pin crown; making the necessary wax pattern and casting separate from the porcelain. In bridge-work we advise the use of either long pin facings, or long pin saddle-back teeth; these to have pins and surface oiled so that they can be removed from the wax pattern; they would afterward be fastened in position on the casting by means of an oxyphosphate of zinc. The pin-holes would be cored in the casting by inserting tiny graphite cores in the holes in the wax, and having their free ends extend far enough to allow the investment to hold them in position after the wax pattern is burned out. These cores would have to be drilled out of the casting.

Graphite rods suitable for these cores may be found in the very tiny lead pencils that are used at dances and card parties, and may be removed from the pencil by soaking the latter in water for a long enough time to dissolve the glue that holds the pencil assembled. Steele's facings may be used nicely in making bridge-work by the casting process. The backings—which must be of gold or platinum—are flasked with the wax pattern and the casting made.

The casting process does not give us the same step of advancement in bridge-casting that we had hoped it would, or as much as it has done for many other lines of our work. The body part of a cast bridge is good, but its cast attachment to the anchorage fixtures is not secure unless such unions are afterwards soldered. This soldering for anchorages almost invariably necessitates investing, and thus seems to make double work. It is not wise to cast anchorages directly with a bridge unless such bridge is a very short one; or has only one fixed anchorage. The shrinkage is very likely to be sufficient to prevent proper adaptation to the teeth or stumps for which it was made.

If for want of space the body part of a bridge has to be made small, such small bulk may have a very considerable amount of rigidity added to it by adding to the gold to be used quite a little platinum. Such an alloy can be effected only by heating the mass to be alloyed to a temperature sufficient to thoroughly fuse the platinum. Otherwise we may be surprised to find that our platinum remained unfused and simply hidden in a mass and served no other purpose than to clog up the sprue opening when casting was attempted. Such an alloy can be properly effected only by the oxy-hydrogen blow-pipe, or the electric arc.—*Dental Digest.*

PLATE CASTING

By J. G. Lane, Philadelphia, Pa.

Casting small gold plates is a practicable operation. Partial plates of exceedingly irregular form, or with lugs or clasps attached thereto, can be very advantageously made by the casting process. In large plate work the task becomes more difficult, and it is therefore a question whether it is or is not advisable to make large gold bases by casting. In this kind of gold casting the same detail of preparation of the case would obtain as for aluminum casting except that the sprue and gates should be a little smaller. The same kind of model and investment material would be used. The gold used should be an alloy of gold and platinum in order to get the necessary rigidity. Teeth could be either soldered on or fastened with rubber.—*Dental Digest.*

TO ADJUST SPRING OF HANDPIECE

When the wrist-spring continually loosens from the spindle of the handpiece, dry off the oil over alcohol flame and then stick the ends together again with gum shellac.—*American Journal of Dental Science.*

TO IMPROVE THE COLOR OF PINK RUBBER

Take a piece of absorbent cotton, saturate it with sulphuric acid, and rub it over the prosthetic rubber piece until it is black. Wash off every trace of the acid. The resulting color is a perfect imitation of the natural gums.—*Le Laboratoire et le Progrès Dentaire.*

SUBSTITUTES FOR COCAIN

Mr. J. R. Pedley (Tunbridge Wells), writing to the *British Medical Journal,* says: "A good deal of prominence given to novocain leads one to suppose that at last a substitute for cocain has been discovered. In comparing novocain, however, with cocain with regard to anesthetic strength, I notice that it is not definitely stated whether the former was used with or without the addition of suprarenal gland. Having used novocain in a large number of tooth extractions, and novocain suprarenin, I think your readers will find that in anesthetic strength a 1 per cent. solution of cocain hydrochloride is equal to a 2 per cent. or 2½ per cent. novocain (without suprarenal extract) ; and that a 1 per cent. cocain hydrochloride suprarenin is equal to a 2 per cent. novocain suprarenin solution. Unfortunately we are, as dentists, frequently called upon to remove septic roots and teeth from inflamed bony tissues, and it is in these cases the addition of suprarenal gland extracts is surely contra-indicated. Novocain (that is, novocain suprarenin) tablets, if injected where these conditions are present, I have found, by arresting all hemorrhage and the evacuation of discharges for some hours, is followed by an unusual amount of aching pains in the jaws. In conclusion, novocain, strength for strength in anesthetic effect, and without the addition of suprarenal gland, is a poor substitute for cocain. The ideal local anesthetic from a dentist's point of view, is still to be discovered."—*British Dental Journal.*

ADAPTATION OF PORCELAIN CROWNS

By Raymond S. Clark, Mount Holly, N. J.

One of the most valuable features of the casting method is the adaptation of a porcelain crown to the root of a tooth, especially if the root is decayed beyond the gum line.

First, the root is prepared as usual for the ordinary porcelain crown, the root cut off slightly below the gum labially, and the root canal enlarged.

A Logan detachable porcelain crown is ground so as to nearly touch the root on the labial side only, with a space of at least one-sixteenth inch lingually.

A piece of wax is softened in hot water and rolled to the shape of a double cone, three-quarters inch long and one-eighth inch diameter at the thickest part, which is the center.

The root canal and pinhole in the crown are then lubricated, carbolized soap preferred; the conical piece of wax is pushed into the canal; then the crown is pushed on the other point of the wax, and adjusted to its proper position, leaving the wax at least the thickness of thirty-gauge gold at the thinnest part, which will be labially.

If the wax is made thicker, while it can be easily cast, the extra force required may distort the rest.

The wax is then trimmed flush with the root, and the crown leaving no overlapping margins. The crown is then chilled and removed, leaving the wax on the root.

From this point on the wax is treated as a simple inlay. A heated wire is touched to the protruding wax pin and allowed to cool; the wax may then be withdrawn with a *straight* pull, and immediately mounted on the sprue-former with the least amount of handling, and that means the least danger of being injured.

After the casting is made, the extra metal is of course attached to the pin that enters the crown; this is cut off and the pin easily adjusted to the crown, and as there was no alteration to the base and the pin which enters the root canal, it will fit the root without further adjustment.—*Dental Brief.*

A CONVENIENT MATRIX

By M. A. Gottlieb

In filling cavities with amalgam where a matrix is required, and none is at hand, a good matrix can quickly and easily be made as follows: Get a piece of flexible cardboard,—a visiting card will do; shape it to form a band around the tooth, overlapping the ends, and secure it by wedging in with orange wood. If there are no adjacent teeth the band may be secured with floss silk. Matrices so made are not irritating to the gums, are easily constructed, easily removed, can be adapted snugly, and you can use a new matrix for each filling. Good results can be obtained by their use. A stock of such matrices kept on hand, in the form of bands of different sizes, the ends pasted together, may be of great convenience.—*Odontologist.*

TO REPLACE A BROKEN FACING

By Max H. Feldman

In repairing a broken facing much trouble is very often experienced in drilling into the gold holes which will accurately fit the pins of a tooth. The weakness of the support can readily be seen when, the first holes having been drilled incorrectly, others must be drilled in the same region. The suggestion offered will certainly be of much help in obtaining accurate points of anchorage in the gold for the pins of the porcelain facing.

Select your tooth of proper shape, size, and shade, and back it up with thick No. 60 tin foil, just as in backing with gold. Then grind the pins of the old facing flush with the backing, upon which the tin foil pattern is placed. With a pencil mark on the gold the points corresponding to the holes in the tin foil, and drill through. The pins of the facing will pass through perfectly, and little trouble is experienced in fitting.

The advantage of this procedure is that we can adjust our tin foil, which corresponds to the back of the tooth, exactly where we want it, unhampered by the pins. There is no guesswork attached to it. It is a certain method with a certain result.—*Odontologist.*

ANCHORAGE FOR BRIDGE DENTURES

By Ellison Hillyer

When a molar is selected as an anchorage there is no better support than a well-fitting gold shell crown. When the proper shaping of the surfaces renders the pulp liable to injury and subsequent death, it would be advisable to devitalize and properly treat and fill the canals. If no such injury is liable to occur, the surfaces of the tooth may be treated with silver nitrate just prior to the insertion of the bridge. This same anchorage may be used on the second bicuspid, and in extreme cases, for the required strength of support, on the first bicuspid tooth; the latter, however, is too far forward to afford an esthetic appearance, and in most cases its choice is unnecessary.—*Odontologist.*

DISCOLORATION OF THE TEETH AND ITS TREATMENT

By Gonzalez Kukay

A most efficient and safe bleaching liquid is Merck's perhydrol of 100 per cent. which yields excellent results. The decayed dentin in the crown and in the canal is removed, preferably with excavators of gold or platinum. If ordinary excavators are used, care must be taken that they do not oxidize. The cavity is frequently rinsed with magnesia water. Cotton saturated in perhydrol is placed in the cavity and sealed in with oxychlorid cement, repeating this operation daily. The flask which contains the perhydrol is covered with wax up to the neck; it must be sealed with molten wax after every use, and kept in a cool place inside the metallic tube in which it is sold.—*La Odontologia.*

TO FASTEN BROKEN TEETH TO A PLASTER MODEL

By Fritz Sachse

The best means of fastening broken teeth to a plaster model is potassium silicate as a cement, very thinly mixed and immediately applied. It takes at least one hour to dry. If one cannot afford to wait so long, the following sticking wax is preferable to potassium silicate. Melt one to two parts of rosin in a small tin dish and add two to three parts of rose-colored wax. If both parts of the plaster are heated, the wax will be found to be an excellent adhesive.—*Zahntichnische Nachrichten.*

REMOVE GREASE FROM SOLDER

Give solder an acid bath when purchased from the dealer—this removes all grease and it will flow better.—*American Journal of Dental Science.*

WIRING LOOSE TEETH

By R. B. Tuller

In wiring loose teeth together, instead of weaving a wire in and out around each tooth and then back the same way, it will often be found easier and better to use a double wire, making one loop around all the teeth involved, and twisting the ends together at a convenient place with pliers, but not drawing the loop tightly. Then take shorter bits of wire and make as many long staples as ties between the teeth are wanted. Push them from the inside outwardly, one leg of staple below the wire loop and the other above. Twist these ends with pliers, drawing the loop wires together—or toward each other between the teeth. This will tighten the loop up and make it hug every tooth, holding loose teeth in line so firmly that they can scarcely be moved any more than the solid teeth, and may be so held for months. The twisted ends cut off at a reasonable length are then bent over in between the teeth. Of course, any wired teeth will catch some food particles, but these may mostly be removed by rinsing thoroughly. Round wires against the teeth do not hold secretions like flat bands, which usually cause decay after a few months or even a few weeks. No decay will occur on account of round wires if any precaution is taken to flush out, and sometimes perhaps to pick out some of the collected food. Loose teeth held in this way for months and properly scaled and treated have often become very firm and healthy again.—*American Dental Journal.*

CAST GOLD PLATES

By H. Seger - Dorez

The simplest method of obtaining a gold plate at one casting with the porcelain teeth in position is the following: Adjust the teeth and mark the contours on the model with a fine point or a sharp pencil. Cut the pins almost flush with the enamel of the tooth and file them flat. After washing them in alcohol, back the teeth with a No. 5 wax sheet. Adjust the clasps. Oil the model and the clasps which are fastened to the stearin-coated model. Carve the wax as carefully as possible, set up the teeth in the correct positions which they are to occupy. Place the sprue-wire, invest in fine investment, covering the teeth entirely, but not the clasps, which remain fastened on the model. Cast the piece, clean it, replace it on the model, fasten the clasps with wax, invest in plaster and earth, solder the clasps and finish.—*Le Monde Dentaire.*

FOR A ROOT CANAL DRESSING

By F. W. Stephan, Chicago, Ill.

Wind a very little cotton around a gutta-percha root canal point. Dip in the agent to be used and place in the root canal. If the end projects soften with heat and pack into the pulp chamber. This means of carrying a dressing can be used even with such drugs as terebene and eucalyptol which soften gutta-percha, as the cotton allows it to be easily withdrawn.—*Dental Review.*

VARNISHED STEEL INSTRUMENTS FOR CEMENT WORKING

Acting on a suggestion by Dr. Ames, Dr. H. W. Gillett, of New York, coats all the metallic instruments he uses in cement work by first cleansing them and then dipping them into a bottle of a varnish known as "liquid amber." After a few hours this becomes quite hard and forms a satisfactory protection. In recent years it is contended that the cements, especially the new silicated cements, are much impaired in color and in character by contact with steel instruments. Instruments of bone, ivory, etc., intended for manipulating cements, are alike weak and clumsy, and ill adapted for reaching many positions where cements are needed. Dr. Gillett finds steel instruments coated with a quick-drying hard varnish have no deleterious effects on the cements. After each use they are cleaned, dipped into the varnish and laid aside to dry. The varnish forms a very thin and very adhesive coating.—*Dental Cosmos.*

ACCURATE ADAPTATION TO BADLY DECAYED ROOTS IN CROWNING

By John Steele, Denver, Col.

A simple and most efficient method of securing an accurately fitting base and pin for crowns is as follows:

Have always ready several platinum posts of small and medium sizes, with disks of gold 32 gauge, 22 k., soldered at about the point to which you might expect the pin to enter the root canal. (Fig. 1.)

Remove all decay and prepare the root in a manner that will give it greatest resisting strength. Shape the pin so that it enters the root, until the disk just rests on the most prominent part. Trim the disk and bend it until it approximates to the shape of the root.

Flow wax on the under surface of the disk, and if the root is unduly enlarged by decay, let wax extend down on pin. Press the wax to place, chill and remove and trim away any excess. Add more wax if necessary and press to place again. (Fig. 2.)

Remove and insert sprue inside of wax and cast with 20 or 22 k. gold. (Fig. 3.)

You can now depend on having a perfectly fitting base for your crown, most of the speed in taking and accuracy of your impression being due to the fixed disk of gold on the pin.—*Items of Interest.*

SIZE OF SPRUE WIRE

By M. L. Ward, Ann Arbor, Mich.

I want to suggest that the size of the sprue wire is important, the one which I have adhered to closely is about 80-1000, which is a little larger than a No. 14 wire.—*Dental Register.*

SOCIETY·ANNOUNCEMENTS

AMERICAN CIRCULATING DENTAL CLINIC

(Chicago District)

NOTICE

At a meeting of the Chicago Committee of the American Circulating Dental Clinic it was decided, in order to create interest and reach the greatest number of dentists who otherwise might not be asked to clinic, to make the clinic competitive. This will give every man who has a new idea a chance to compete. A letter explaining the clinic in detail should be sent to the District Chairman, Dr. D. C. Bacon, 103 State Street, Chicago, and the clinic under separate cover with concise explanation accompanying it. Each clinic will be given a number as it arrives, and the Committee will select the ten best, after which the names will be attached so that the clinician may receive full credit for his work.

NEW ORLEANS ODONTOLOGICAL SOCIETY

At the annual meeting of the Odontological Society of New Orleans the following officers were elected to serve for the ensuing year:

President, Dr. J. C. Crimen.

Vice President, Dr. E. L. Fortier.

Secretary-treasurer, Dr. St. Clair Duke.

Executive Committee, Drs. L. D. Archinard, H. P. Magruder and Paul DeVerges.

Suitable resolutions were passed on the death of John J. Archinard, A. M., M. D., an honorary member of this society.

ST. CLAIR DUKE, D. D. S., Secy.

THE G. V. BLACK DENTAL CLUB CLINIC

Everybody interested in advanced dentistry is cordially invited to attend the annual clinic of the G. V. Black Dental Club.

The meetings will be held in the old State Capitol Building in St. Paul on Thursday and Friday, February 24th and 25th, 1910.

The program was in part published in the January Dental Journals and it does not seem necessary to publish it again.

There will be operations of all kinds. A large number of men will hold table clinics.

A large number of manufacturers have reserved space and will be present to demonstrate the new things in dentistry. The profession generally is invited to attend.

For any information address

R. B. WILSON, Secretary.
Amer. Nat. Bank Bldg., St. Paul, Minn.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS MEETING

The 28th annual session of the National Association of Dental Examiners will be held at the "Hotel Savoy," Denver, Colorado, commencing Monday, August 1st, 1910, at 10 a. m. The rates will be $2.00 per day for one and $3.00 per day for two persons in room, European plan. Large rooms for one or two persons with private bath $4.00 and $5.00 per day.

Meeting and committee rooms at the service of the Association free and every accommodation extended.

An early mail reservation is requested, the time being the busy season.

A full representation from every State Board in the United States is earnestly desired.

J. J. WRIGHT, D. D. S., President. Wells Bldg., Milwaukee, Wis.
CHARLES A. MEEKER, D. D. S.,
29 Fulton St., Newark, N. J. Secretary and Treasurer.

SOUTHERN BRANCH NATIONAL DENTAL ASSOCIATION

The thirteenth annual meeting of the Southern Branch of the National Dental Association will be held in Houston, Texas, Wednesday, May 4th, 1910, continuing in session three days.

The association has accepted the invitation of the Texas State Dental Association to meet conjointly with them and as their guests.

The officers and members are actively at work and a most instructive program is being arranged.

A preliminary program will be announced later.

CARROLL H. FRINK, D. D. S., Recording Secretary.
Suite 301-302 Masonic Temple, Jacksonville, Florida.

INDIANA STATE DENTAL ASSOCIATION

The fifty-second annual meeting of the Indiana State Dental Association will be held in Indianapolis, May 17, 18, 19, 1910, at the Claypool Hotel. This promises to be a great meeting.

OTTO U. KING, Secretary.,
Huntington, Ind.

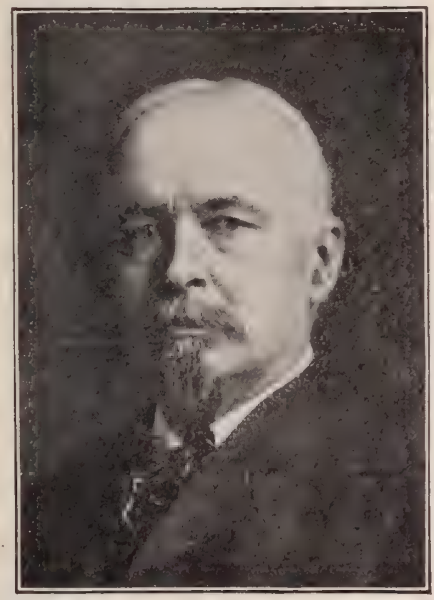
MISSISSIPPI DENTAL ASSOCIATION

The seventeenth annual meeting of the Mississippi Dental Association will be held in Jackson, in the Senate Chamber of the Capitol, May 24 to 26, 1910. All ethical dentists are invited. L. B. PRICE, Secy.,
Corinth, Miss.

CLINIC MICHIGAN FIRST DISTRICT SOCIETY

The All-day Annual Clinic of the First District Dental Society, State of Michigan, will be held at the Detroit College of Medicine, Detroit, on Saturday, February 12th, 1910. J. A. WALKER, Sec.,
284 Grand River Ave., Detroit.

OUR LECTURES AND OUR LECTURER.



John Worthington Dowd, LL. D.
Our Lecturer.

We are now ready to fix dates for lectures before Teachers' Associations, public schools and the public generally, and request correspondence looking to this end from dental societies and individual dentists in Ohio, Michigan and Indiana.

For this work we have secured the services of Mr. John W. Dowd, LL. D., an educator and lecturer of force, ability and wide experience. Mr. Dowd has made a careful study of all branches of the subject of dental education, and is prepared to present them in a popular, interesting and convincing manner.

The lectures are illustrated by a large number of accurate and beautiful slides, made from photographs of subjects supplied by some of the ablest men in the profession, thrown on the screen by the finest stereopticon (Bausch & Lomb) possible to procure, and are presented in a manner sure to please and instruct the average audience.

The co-operation of every dentist within the territory mentioned, who is interested in the great cause of popular education, is most earnestly invited.

In reply to many questions as to the expense, necessary arrangements and other particulars, we have formulated the following:

Things That We Will Do.

We supply the lecturer, the lecture, the lantern and the slides.

We supply press notices and cuts for advertising the lectures in local newspapers.

We supply circulars and tickets for distribution to school children, parents and others, advertising the lectures and creating popular interest.

We pay our lecturer for his services and all of his expenses, including his hotel bills. No part of this expense is asked from dentists, nor will any be accepted.

Things For Dentists to Do.

Form a local organization, including as many dentists as possible, and appoint a small committee to look after the part of the work that we cannot do. Do this at once.

The purpose of this committee is to make all necessary arrangements.

Get co-operation of school board.

Arrange approximate date.

Secure and pay rent of hall.

Arrange to have teachers distribute printing and tickets among their pupils. These tickets are free, of course, and admit the entire family. Establish a few centers where tickets may be obtained.

Arrange for use of electric current and have proper connection made.

See that lecture is well advertised in local papers and announced by teachers daily until date of lecture.

See that no dentist makes himself prominent in the work, assumes credit, or secures any personal advertising.

Furnish man to assist our lecturer, operate lantern, etc., at time of lecture.

Furnish a table not less than 24x42 inches in size and 3 ft. 6 in. high.

As soon as committee is appointed and at least part of the work is done, write us, giving us:—

Name of chairman of committee.

Size of the hall.

Seating capacity of hall.

Number of pupils in the public schools.

Kind of electric current, whether direct or alternating. State whether current is available in daytime.

When lecture is wanted, giving approximate date.

The Ransom & Randolph Co. is not to be referred to nor connected with these lectures in any manner. When necessary to explain their origin, say they are backed by a magazine called The Dental Summary.

As soon as we hear from local committees we will complete arrangements and proceed with out part of the work.

Now—all together, for the common good. Address

Educational Bureau,
The Dental Summary,
Toledo, Ohio.

NEWS and OPINIONS

The Characteristic Thing in the Attitude of Americans Toward Money.

The *American Magazine* contains an article on ''Will-Power, Work and Wealth,'' by Henry Van Dyke, which was the fourth of a series of lectures on ''The Spirit of America,'' delivered by Prof. Van Dyke, at the Sorbonne, in Paris. In speaking of the so-called spirit of the ''Almighty Dollar'' in America, Prof. Van Dyke says:

''The characteristic thing in the attitude of the Americans toward money is this: not that they adore the dollar, but that they admire the energy of the man who has made it. They consider the multi-millionaire much less as the possessor of an enormous fortune, than as the successful leader of great enterprizes in the world of affairs, a master of the steel industry, the head of a great railway system, the developer of the production of mineral oil, the organizer of large concerns which promote general prosperity. He represents to them achievement, force, courage, tireless will-power. A man who is very rich merely by inheritance, who has no manifest share in the activities of the country, has quite a different place in their attention. They are entertained, or perhaps shocked, by his expenditures, but they regard him lightly. It is the man who does things, and does them largely, in whom they take a serious interest. They are inclined, perhaps, to pardon him for things that ought not to be pardoned, because they feel so strongly the fascination of his potent will, his practical efficiency. It is not the might of the dollar that impresses them, it is the might of the man who wins the dollar magnificently by the development of American industry.

''This, I assure you, is the characteristic attitude of the typical American toward wealth. It does not confer a social status by itself in the United States any more than it does in England or in France. But it commands public attention by its relation to national will-power.''

Singapore, Dec. 20, 1910.

Greetings to The Dental Summary from south of the equator. Am finding unique facts, etc., about dentistry.

Yours truly,
H. L. Ambler.

Army Dental Corps.

Report of changes of stations and duties of dental surgeons, U. S. army:

Harold O. Scott, on expiration of present leave, will proceed to Columbus Barracks, Ohio, for duty, relieving Dental Surg. Rex. H. Rhoades, who will proceed to San Francisco and take transport about February 5, 1910, for Philippine Islands, for duty. (November 16th, W. D.)

John S. Marshall, examining and supervising dental surgeon, is granted leave for three months, upon his relief from duty in the Philippines. (November 17th, W. D.)

Raymond E. Ingalls, from duty in the Philippines, to sail from Manila about February 15, 1910, to San Francisco, for further orders. (November 17th, W. D.)

For the week ending December 18, 1909:

Robert T. Oliver, examining and supervising dental surgeon: Ordered to Fort Hancock, N. J., for duty.

Alden Carpenter: Ordered to proceed to Fort Ethan Allen, Vt., for temporary duty.

George D. Graham: Ordered to Fort Leavenworth, Kansas, for duty.

Alden Carpenter: Ordered to West Point, N. Y., for duty.

Dont's for Young Dentists.

Dr. Dayton Dunbar Campbell of the faculty of the Kansas City Dental college was the guest of honor December 15 at a banquet at the Hotel Baltimore given by the members of the Delta Sigma Delta fraternity of the college, and as a fitting climax to the event Dr. Campbell gave a little talk on ''Dental Dont's.''

Here are some of Dr. Campbell's dont's—''Don't brag about your practice or the size of your fees. Don't gossip with your patients. Don't do any quack advertising. Don't encourage familiarity on the part of your women patients. Don't knock your brother practitioners. Don't talk shop at social gatherings. Don't be untidy.''

The dentists of Dayton, Ohio, are planning to establish a dental branch of the public library, where literature of all kinds bearing on the subject will be on file. A Dental Library Association will be organized next month.

Deaths.

December 8—Dr. Albert W. Ricker, of Cochituate, Mass., at Natick, aged 30 years.

December 10—Dr. Frank Green, Gillespie, Ill., heart trouble.

December 12—Dr. J. H. Mathers, a well-known dentist of Forty Fort, died from burns sustained by an explosion of gasoline in his laboratory on Wednesday, December 8.

December 13—Dr. M. C. Nall, of Princeton, Tenn., aged 30 years, of typhoid fever.

December 19—Dr. Theodore A. Lowry, of Benton Harbor, Mich., aged 57 years, from heart trouble.

December 22—Dr. Alonzo F. Saville, of Rockland, Mass., aged 63 years, from bronchial trouble.

December 23—Dr. L. Brady Nicely at Williamsport, Pa., of typhoid fever.

December 23—Dr. A. R. Vallee, Dodgeville, Wis., aged 55 years, as a result of taking a dose of medicine from the wrong bottle.

December 25—Dr. Leonard J. Schneider, Omaha, Neb., aged 28 years.

January 1—Dr. F. A. Merrill, Boston, Mass., age 60, cause pneumonia.

Fires.

December 23—The offices of the following dentists were destroyed, in the Rialto Building, Kansas City, Mo.: Dr. R. V. Anderson, Dr. Joel E. Hawley, Dr. E. E. McCarty, Dr. R. L. Blakey, Dr. I. F. Hereford, Dr. R. M. Weber, Dr. May Weston, Dr. C. L. Hungleford, Dr. Herbert Hutton, Dr. F. B. Provost, Dr. Jerome Stewart, Dr. E. M. Hall, Dr. J. H. Hollingsworth, Dr. J. T. Longstreth, Dr. C. P. Becker, Dr. S. V. Overall, Dr. Elliott Smith, Dr. Shirley Millet, Dr. T. W. Stark, Dr. John Howard, Dr. Charles Howard.

December 24—Millard Hall, the dental building at Minnesota State University. Loss $125,000, covered by 75 per cent insurance.

December 25—Office of Dr. R. J. Humphrey, Ionia, Mich. Loss $1,000.

December 26—Office and dwelling of Dr. F. X. Kernan, Pittsfield, Mass.

December 31—Office of Dr. H. A. Hawkes, Brimfield, Ill. Loss $600; covered by insurance.

Oklahoma Dentists.

At present there are 850 practicing dentists in the state who have been licensed by the board and 350 or 400 dentists located in other states have secured license to practice here from former boards. These latter licenses were issued in territorial days.

Robberies.

December 11—Dr. Miller, Atchison, Kansas, gold plate worth $4.

December 11—Dr. M. S. Bresch, Scranton, Pa., money and jewelry amounting to $215.

December—The C. D. Coll Dental Supply Co., Oklahoma City, Okla., gold and other articles of value amounting to $400.

December—Seven dental offices in Sedalia, Mo., gold plate and filling valued at $200.

December 18—Dr. C. A. Eller and Dr. Pettit, Albuquerque, N. M., quantity of gold filling.

December 18—Dr. E. L. Hammond, Las Vegas, N. M., leaf gold and outfit of instruments.

December 18—Drs. F. W. Smith, Julian Smith, W. N. Le Suer, and W. R. Weber, of Austin, Texas, gold, teeth and fillings valued at $60.

December 18—Dr. H. D. Moorman, Aurora, Ill., $50 worth of gold.

December 19—Dr. H. M. Bell, Houston, Texas, gold valued at $50.

December 24—Dr. J. H. Murphy, Temple, Texas, gold and instruments valued at $100.

December 27—Dr. J. L. Bowman, Long Beach, Cal., $60 worth of gold.

December 27—Dr. A. H. Speer, Long Beach, Cal., $7 worth of materials.

December 30—Dr. L. M. Packard, Douglass, Ariz., $100 worth stolen.

December 30—Dr. J. F. Primley, Douglass, Ariz., $25 worth of gold.

December 30—Dr. D. Gillespie, Douglass, Ariz., $16 worth taken.

December 30—Dr. W. M. Foster, Douglass, Ariz., $15 worth of gold scrap taken.

Marriages.

December 18—Dr. H. A. Waterman, of Hiteman, Neb., and Miss Theresa Lambert, of Des Moines.

December 22—Dr. James Edward Murray, of Denver, Colo., and Miss Mildred Gibson, of Greeley, Colo.

December 25—Dr. C. S. Savage, Ft. Collins, Colo., and Miss Georgiana Jacobs, of Chicago.

The body of D. S. R. Adams, the aged Chelsea, Mass., dentist, has been found. Dr. Adams was confined to his home for some time and a nurse was in constant attendance. On New Year's morning he got up while the nurse was out of the room, put on his clothes and made his escape. A short time after his coat and hat were discovered on the rail of the Meridian st. bridge, a short distance from the Chelsea side. A diver went into the water directly under the spot where Dr. Adams' hat and coat were found, and located the body between the piles of the bridge.

Frederick W. Smith.

(An Appreciation.)

When a man eminent in the public life of his city or state is called upon to pass into the Great Beyond his praises are wont to be sounded and his character eulogized in public both by pen and tongue. But it often happens that attention is thus attracted to the loss of the city or community, not because the public man was more worthy or even more useful than many a one less known, but only more conspicuous. The great number of men are, and must always be, those who in the course of a quiet, busy and uneventful life have attained neither fame nor notable fortune; who are simply honest, God-fearing men, good citizens, good neighbors, faithful husbands, fathers and friends. The death of such men is more than a private or family loss, although no public notice of it may be taken and he departs as quietly and calmly as he lived.

None of the friends of Frederick W. Smith, who died December 21, will hesitate to accord him an honorable place among those men of quiet, unassuming virtue that add so much of strength and stability to our community. From his Scotch ancestry he derived a strength of character and sterling honesty which he maintained untarnished during a long business career. His modest and somewhat retiring disposition, in a great degree, concealed from mere acquaintances the acute and active mind and the kindly and genial disposition which those who knew him best knew and loved. His friends, though not many, were held firmly and loyally with all the strength of a true and steadfast heart. His home, his family and friends were much to him, and to them he gave all of the best that was in him. His end came quietly and calmly, the fitting close of a quiet though earnest and useful life.—*Exchange.*

Report of New Jersey Dentistry Board.

The New Jersey State Board of Registration and Examination in Dentistry has submitted to Gov. Fort a report outlining the work accomplished during the past year. At the meeting of the board in December, 1908, eleven candidates for licenses were examined, and at the meeting last July there were sixty candidates.

The board has made every effort to compel practitioners to observe the provisions of the law requiring the filling in and signing of an annual registration blank, but notwithstanding all that has been done about half the blanks sent out have not been returned. Unless wholesale proceedings in court are instituted the board sees no way to compel compliance with this section of the law. The report outlines the prosecutions which have been conducted by the Attorney-General's office during the year. These included proceedings against three dentists in Jersey City, two in Paterson, two in New Brunswick and one in Newark.

The Three Political Parties of the Future.

"Is the Republican Party Breaking up?" is the title of the leading feature in the February *American Magazine.* Its author is Ray Stannard Baker, and he claims that there are no longer two parties except in name. In reality there are three parties which he defines as follows:

"1. The 'Stand-patters' or Conservatives, represented by such men as Aldrich and Cannon, among the Republicans and McEnery of Louisiana among the Democrats. They stand essentially for the control of government by property and privilleged interests. They have with them the considerable group of older and temperamentally conservative voters who still cling unthinkingly to party names.

"2. The Insurgents, or Progressives, led by LaFollette, Bristow, Cummins, and others among the Republicans, and Bryan, Champ Clark and others among the Democrats. Though they may vary in opinion as to how much the tariff should be reduced, or how far government control of corporations should go, or whether the states or the nation should be the chief regulator, they all stand firmly together upon the platform that the power of property in governmental affairs must be limited, that the people must rule.

"3. The Socialists, or Radicals, with a small following everywhere. In Wisconsin they have already elected five members of the legislature, and in Milwaukee they have ten of the aldermen, six county supervisors and four directors on the school board. They stand upon the platform, 'Let the nation own the trusts.' They argue that so long as private and personal ownership of the great sources of production and of public utilities is permitted, property corruption in government is sure to continue."

Study Medical Inspection.

Frank G. Crane, Louis H. Paine and John F. McKenna, of the school board, and Dr. William B. Guitteau, superintendent of Toledo schools, recently spent two days in Cleveland, inspecting the system of medical inspection in use in the schools of that city.

The knowledge to be gained on this trip is intended for use of the educational committee in formulating its plans for a system of medical inspection in the public schools of Toledo. A movement is on foot in Toledo to include dental inspection also.

A Novel Method of Saloon Regulation.

If a saloon breaks an ordinance in Cleveland, if it sells to minors or to men already intoxicated; if thefts or disturbance or disorder are constantly reported from it, and the proprietor does not heed warnings, a policeman is stationed at the door. This policeman takes the name and address of every man who enters, as a possible witness in a suit against the proprietor, says *The Delineator* for February. Within half an hour all business stops. Not a man enters as long as the officer remains.

A warning is enough. Every saloonkeeper is transformed into a peace officer in his own saloon, compelled for the sake of his pocket to keep the place just as quiet and orderly as he possibly can. In 1907 there were 30,000 arrests in Cleveland; in 1908, but 10,085.

The conclusion is that other cities no quieter, more decent or orderly than Cleveland, are making sixty-six per cent more arrests than they need to: wasting millions of public money in useless fees, causing untold distress and hardship which results in no benefit to any one.

Chief Fred Kohler, out of an experience of twenty years as a policeman, declares that arrests for intoxication promote drunkenness instead of reducing it. A man who does not drink may keep sober after he has been dragged into police court, but a drinking man will inevitably walk straight out and get drunk again.

A man is never arrested the first time he is found drunk in Cleveland, unless there is a serious additional charge. If a man is a habitual drunkard, there is nothing to do but send him to the workhouse, though the chief and others who have studied results in Cleveland express strong doubts as to the efficacy of that treatment.

"What Is Wrong With Our Public Schools"

The foregoing is the generic title of an extraordinary series of six special articles, by Joseph M. Rogers, to be published in *Lippincott's Magazine.* There is no interrogation-point after the title. It is not a question. Mr. Rogers is dealing with facts —facts ascertained by him after months of the most arduous and careful research. Says Mr. Rogers:

"There is something wrong with the public schools. More than that, there is something fundamentally wrong with our theories of education. We teach, but we do not educate. We spend a good deal of money and energy to little purpose. It is not necessary to prove these statements. They are admitted by educators, from university presidents to primary teachers; by school administrators, from state and federal officials down to those in the smallest country districts; by parents the country over; while children themselves are, of course, dissatisfied. This series of articles is designed to examine—untechnically—the defects of existing systems, offer some constructive criticism, and make suggestions looking toward improvement. It is hoped through them to arouse among both parents and teachers a deeper interest in the needs of our public schools, to the end that there may be less complaining and more intelligent effort to amend conditions."

Teachers everywhere and, in fact, everybody who is directly or indirectly interested in the cause of education, will find these articles helpful and enlightening. The first, on "Some Notable Deficiencies," will be found in the January number. Other papers, on "Education Outside of Books," "The Teacher," "Some Reforms Suggested," "The Cost of Improvement," and "A Model School Outlined," will appear in consecutive numbers. It is not too much to say that this is one of the most striking and noteworthy series of articles ever brought out by any magazine.

Sagebrush Philosophy.

"Live, laugh and love;
There'll come a time when you can't.

That's not bad—in fact, we think it mighty good; also, that the following "believes" hammer the iron on the right end.

In the Gospel of Sunshine, the which includes hope and happiness while here. The mummy ain't had no fun for moren five thousand years.

In a Supreme Being who is too busy to always take notice—who expects you and I to do the right thing but who, like you and I, can forgive and forget.

In a hell on earth; in a heaven if it happens, from which nobody will be absolutely barred.

In honesty and industry and decency; in a charity not altogether monetary; in a religion which don't have to holler.

In the use of words to express thought, sincerity of purpose and belief.

In the enjoyment of this life to the full of opportunity and environment; in laughter which feeds the red corpuscle; in love for all inanimate and animate nature, including each other.

In the shrine of sex and the divinity of desire; in love's confessional whose secrets are sacred; in the man and the woman created in God's image.

In courtesy and kindness, which of necessity comprises the occasional use of a club.

In a tomorrow; but am not cocksure. Today I will bet on.

In social, mental and spiritual freedom.

—And maybe a few other things.

Thus sayeth Bill Barlow, editor of The Sagebrush Philosopher, Douglas, Wyo.

The Government and the Magazines.

The magazines are chief producers of the lucrative business of the post-office. Even without revision of the very favorable contracts with the railroads for carrying the mail, and without the other economies that could be brought about by a better business organization of the postal service, there is so large a profit collected by the Government upon all the business that the post-office does for private patrons, including the newspapers and periodicals, that this surplus practically pays the Government's own great bill for carrying and distributing its own mail matter. The magazines and periodicals of this country confessedly surpass in merit those of any other part of the world. Their merit is due to their patronage by a great and intelligent nation spread from the Atlantic to the Pacific. A hostile postal policy such as Mr. Taft proposes would have made impossible the development of such valuable and beautiful expressions of our life as are typified, for example, by the *Century Magazine*. Let the Post-Office Department set its own house in order, give us a balance-sheet of its real transactions as the other departments of the Government do, rid itself of its harmful and extravagant relations to politics and party spoils, and bring a permanent business head to the conduct of its large affairs. Then, if necessary to deal with such delicate questions as radical changes in rates, there will be time enough to discuss them on their merits.—*American Review of Reviews.*

A Little Learning.

Here are a few history answers collected in New York State Education Department in the past year:

Modern conveniences. Incubators and fireless telegraphy.

The Republican Party was formerly known as the Free Spoil.

The President takes the yoke of office.

The salaries of teachers are paid from the dog-tax.

Benjamin Franklin produced electricity by rubbing cats backwards.

Lincoln had a woman make him a suit of homespun from rails which he had split. They were hickory rails, hence hickory shirts.

The cause of the Revolution was that the colonists wanted room to pasture their cattle.

The Spoils system: The place where spoiled things and waste are kept. The board of health has largely taken the place of this.

The difference between Jackson and Roosevelt is that Jackson has been dead a long time and Roosevelt is in Africa shooting lions.—*Woman's Home Companion.*

Dental Clinic for School Children of Philadelphia, Pa.

To facilitate the opening of the new municipal dental clinic, under the direction of the Department of Health and Charities, the Water Bureau has turned over to the use of Director Neff a room it has been occupying for its records adjoining that of the eye clinic on the seventh floor in the northeast corridor of City Hall. Dean Kirk, of the University of Pennsylvania Dental Department, has given assurance that 20 graduates who are members of the Philadelphia Dental Association will render free service to the city. Councils approved an appropriation of $3000 for the installation of this clinic. It is planned to prevent its abuse by persons well able to pay, and children requesting dental services must come fortified with a certificate signed by the school inspector, district school superintendent and the visiting school nurses before such service will be rendered. The clinic will not be opened for two months.

The St. Louis Society of Dental Science has elected the following officers: Dr. Clarence O. Simpson, president; Dr. G. E. Hourn, vice-president; Dr. J. P. Marshall, secretary; Dr. C. S. Dunham, treasurer; Dr. H. W. Laneberg, curator. Executive Committee—Doctors Richard Summa, E. P. Dameron, A. H. Winkelmeyer, W. E. Wilson and W. B. Arthur. Advisory Council—Doctors G. A. Bowman, A. H. Fuller, D. O. M. Le Cron, B. L. Thorpe, W. E. Brown, E. E. Haverstick and Adam Flickinger.

The Institute of Dental Pedagogics (Toronto, Ont.) recently elected the following officers: President, Dr. J. Q. Byram, Indiana Dental College; vice-president, Dr. Donald M. Gallie, Illinois School of Dentistry, Chicago; secretary-treasurer, Dr. F. W. Gethro, Northwestern University, Chicago. The following committee was appointed in connection with the W. D. Miller memorial fund: Dr. T. W. Brophy, Chicago; Dr. B. E. Lischer, St. Louis, and Dr. L. P. Hall, Ann Arbor.

The dental index bureau was organized under the auspices of this association. Its purpose is to index and classify the literature of dentistry as published in the monthly journals, and to furnish card indexes to the various school, society and individual dental libraries throughout the continent.

Dr. Ervin A. Randall of Providence, R. I., has received the appointment as Dental Surgeon at the State Institutions at Howard. This office has just been created and will do away with the visiting dental service which has hitherto prevailed.

Compulsory Medical Examination in Schools Proposed.

Columbus, Jan. 11.—Dr. C. O. Probst, secretary of the state board of health, held a conference Monday with Howard Strong, assistant secretary of the Cleveland chamber of commerce, and Dr. C. E. Ford, superintendent of the Cleveland health department, concerning a bill to be introduced in the legislature providing for compulsory medical examination in the public schools.

Dr. Probst's measure is modeled after the law now in force in Massachusetts. State School Commissioner J. W. Zeller assisted in its preparation. It provides in brief that every school child shall annually be examined as to its sight, hearing and obstructions to breathing. This is to be done under the supervision of physicians who are to be appointed by the board of education.

This certainly is commendable so far as it goes; but unless dental examination is included, only a fraction of the possible benefit can result.

New Kind of Tooth Puller.

Sidney A. Grant of Thompsonville, Ct., has invented an attachment for dentists' forceps which it is claimed will pull teeth more easily and with less pain to the patient than is possible with the forceps now used, however skillful and strong the dentist. One of the level handles of the forceps has a straight rod-like extension on which slides a heavy plunger block that brings up sharply against a shoulder or stop at the end. When this happens and the forceps themselves are attached to a tooth, out comes the tooth as smooth as you please. This little jerk will accomplish more than the application of a lot of muscular force.—Springfield, Mass., *Republican.*

"Mary Ann Hubble."

Deborah E. Olds in the February St. Nicholas.

I once knew a woman named Mary Ann Hubble.
And this woman always was looking for trouble:
She was looking all day from the time she got up,
To the candlelight hour when she sat down to sup,
She would look all around her, and search high and low—
Just looking for trouble where'er she would go.
And you may be sure that this Mary Ann Hubble
Had more than her share of what people call trouble.

Suit for Damages.

Andrew Secor of Iowa has brought suit for $10,000 damages in district court against a dentist and a physician, both of Sloan. Secor claims that he went, with his wife, to the dentist's office in November, 1908, where she had several teeth extracted. He affirms that she was in perfect health, but that she was given a large dose of anesthetic and that she never regained consciousness, dying in the dentist's chair two hours after the teeth had been extracted. The case will come up for hearing in the January term of court.

Thomas W. Evans Museum and Dental College.

Since the death in Paris in 1899 of Dr. Thomas W. Evans, the famous American dentist, litigation has kept his estate in the French and American courts. The estate has been finally adjudicated. It will now be possible for the city of Philadelphia, the residuary legatee, to proceed with the erection of the Thomas W. Evans Museum and Dental College. About $6,000,000 is now available.

Fiction thtt amuses and yet gives one something to think about fills the pages of *The Housekeeper* for February. "How Did He Propose?" is a remarkable symposium by the readers, the answers being humorous, serious, pathetic, enlightening. "When Woman Forms a Phalanx" is an interesting article of woman's politics in Denver. There are numerous articles of value to the home, besides the regular departments of fashions, fancywork, cookery and so forth. *The Housekeeper Corporation,* Minneapolis, Minn. Seventy-five cents a year.

Dental Examinations.

California—57 applicants; 34 successful.

Minnesota—101 applicants; 50 successful.

PYORRHEA

Owing to the value of Sal Hepatica in the treatment of diseases of the uric acid diathesis it has been found specially beneficial in pyorrhea alveolaris, a malady in which rheumatism and gout are potent causes. It contains the salts similar to the celebrated Bitter Waters of Europe, fortified by addition of Lithia and Sodium Phosphate. It stimulates liver, tones intestinal glands, purifies alimentary tract, improves digestion, assimilation and metabolism.

Write for free samples.

BRISTOL-MYERS CO.
BROOKLYN-NEW YORK

EDUCATE THE PEOPLE

TO OUR READERS—Cut out any of the items printed under this heading, take them to your local newspaper and have them printed as news matter.

Necessity for Dental Education.

Never until now has there been any general attempt made to prevent decay and disease of the teeth. Forty thousand dentists in the country are kept busy making repairs on teeth in which decay has not been prevented or in making substitutes for those that have been lost through neglect. This is all done for the comparatively few who are able and willing to pay the fees. These few practice cleanliness and try to follow the advice that is given so that they may save their teeth. The great mass of the people have no instruction and do not even try to keep their teeth clean.

The teeth lie at the gateway of the alimentary canal, and their use or abuse makes the first step in digestion. A wrong step causes vicious and unmendable damage.

The fact that uncivilized men have usually good teeth fastens the responsibility on civilized man, and there is something wrong with his methods or his food. He eats without proper chewing. He tries to avoid the trouble of chewing his food by having it made ready for him in pulverized form or in liquids. He eats too fast, and through hurried and incomplete mastication he reduces his general health and his efficiency. Individual efficiency is the foundation stone upon which the national efficiency and progress must rest. It is therefore from the economic view of the whole people, that dental education of the whole people demands first consideration.

Dentistry in Public Schools.

The international dental congress which met recently in Berlin, devoted a great deal of time to the discussion of dental inspection and treatment of school children. This work has advanced further in Germany than elsewhere, but the United States deserves credit for making as early a start as any other country.

In the same year that Jessen commenced his inspection at Strasburg—1901—the superintendent of schools at Andover, Mass., instituted a similar movement and found that children with good teeth made a far better physical showing than those whose teeth were defective. The first plan for regular official inspection and advice was developed in Boston, but was halted for lack of money.

In 1906, Brookline, Mass., made a start, employing four physicians and supplementing the inspection with illustrated lectures for parents and studies in dental hygiene in the schools. New Bedford, Northampton, Waltham, Providence, Altoona, Newark (N. J.), Delaware (Ohio), Cleveland, and many other cities throughout the country, have instituted inspection, and in these cities the children are asked to take home leaflets in which simple instruction is given.

Dental work in public schools could not be expected to extend very rapidly through the country until some of the larger cities should take it up and prove its desirability. New York, Chicago and Philadelphia have made good beginnings and the reform will speedily spread.

No further investigations are required merely for the purpose of showing that there is a great opportunity in this direction for improving the public health. Inspections should be carried on with the direct intention of providing the necessary treatment whenever parents are unwilling or unable to give their children the benefit of it.

Absolutely nothing can stop the adoption of dental inspection in our public schools. It has got to come. Germany has adopted it and made it compulsory for children to have their teeth examined and cared for, and in some municipalities it has even gone so far as the city paying for the work on the children's teeth.

From the scientific standpoint it can be absolutely proved that astounding conditions exist and that the poor condition of the teeth of the children in the schools costs the school board money, actually, for the children do poor work, work more slowly, and educating them is therefore more expensive and less productive of good results than if the children could do their best work. They cannot without good teeth. The mouth is the gateway of the body, and there the germs enter the body. Poor and ill-cared for teeth cause sore mouths, toothache and consequently nervousness. The matter of dental inspection is being taken up throughout the country by the sheer force of its own importance.

Children whose teeth need repair should be urged through suitable notices to their parents to go to a practitioner for treatment. In the case of poor children there must be a dental infirmary of some sort for their reception and care.

CONTENTS

REGULAR CONTRIBUTIONS.

Some Phases of Rigg's Disease .... HOWARD T. STEWART .. 193
Pulp Nodules .... R. R. GILLIS 200
The Present Status of Stomatology .... EDWARD C. BRIGGS 211
High Pressure Anesthesia .... ROBERT H. WELSH 214
Report of Committee on Dental Science and Literature. G. C. BOWLES 216
President's Address .... J. W. LYONS 221
A Study of Malnutrition in the School Child .... E. MATHER SILL 227
Report of Proposed Dental Educational Work in Cleveland Public Schools .... W. G. EBERSOLE 234
The Necessity of Educating the Press and the Profession .... F. W. HOWLETT 241
Save That More Noble Contention .... J. A. RUPERT 253
Some New Features in Orthodontia Appliances .... HERBERT A. PULLEN .. 257
The Broadening Influence of Organization .... L. B. McLAURIN 260
President's Address .... D. A. HOUSE 263
A Practical Suggestion .... G. A. BOWMAN 267
Instruction and Lectures on Oral Hygiene in the Public Schools .... EMMA MEINHARDT 267
Oral Hygiene to Become National Movement .... PAUL G. WHITE 271

THE SUCCESSFUL DENTIST

Winning Patronage .... C. N. JOHNSON 272

MISCELLANY

A Pilgrimage to the Old Home of the Late Willoughby D. Miller .... E. C. MILLS AND H. M. SEMANS 278
New Publications 290
Society Announcements 292
News and Opinions 295

EDITORIAL

Wisdom From the Mouths of Babes 284
Dental Surgeons for Navy and Army 284
Testimonial Banquet in Honor of Dr. G. V. Black 286

PRACTICAL SUGGESTIONS

Polishing the Proximal Surfaces of Fillings .... E. BALLARD LODGE 283
High Pressure Anesthesia .... W. T. JACKMAN 289

To Correspondents: Send communications, exchanges, books for review, etc., intended for the Editor of Dental Summary, to Dr. L. P. Bethel, 1255 Neil Ave., Columbus, Ohio. Subscriptions and advertisements, send to the publishers.

THE RANSOM & RANDOLPH CO., TOLEDO, OHIO.

Copyrighted 1909 by The Ransom & Randolph Co.

Scene at the Testimonial Banquet tendered Dr. G. V. Black by the Chicago-Odontographic Society, in the "Gold Room," Congress Hotel, Chicago, January 29th, 1910.

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX MARCH, 1910 No. 3

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society
and Several Local Dental Societies.

Editorial Office: 1255 Neil Avenue, Columbus, Ohio
L. P. Bethel, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland
Kansas City	Dr. Martin Dewey, Argyle Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.
Los Angeles	Dr. B. Frank Gray, Security Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Louisville	Dr. H. B. Tileston, Equitable Bldg.
Memphis	Dr. D. M. Cattell.
Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Richmond	Dr. F W. Stiff. 600 E. Grace St.
New York City	Dr. W. H. Sieberst, 1 W. 34th St.

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, in U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

SOME PHASES OF RIGG'S DISEASE*

By Howard T. Stewart, D. D. S., Greenville, Miss.

I AM often asked why I hold to the name of "Rigg's Disease." I quote from a paper which I read before the International Dental Convention in 1904: "I know of no better name. I have been trying to find one for several years. I have looked with eagerness; I have considered the many names that have been suggested, only to be disappointed. I have even tried to coin one myself, but to no avail."

My good old dean, Dr. James Truman, wrote to me once and said, "And pray why still call it Rigg's disease?" and he advised me to change it. Dr. Edwin T. Darby wrote and asked me to allow him, as my old teacher, to suggest that I call it by a better name. Dr. D. D. Smith wrote to me and said, "Do not attempt to perpetrate Rigg's disease on the convention at St. Louis."

This all reminds me of the old man who still refused to change his belief after all the arguments of the infidels had been exhausted. The old man said, "These things may all be true, but I ain't going to give up my religion until you give me something better."

---

*Read before the Louisiana State Dental Society, 1909.

When I begin to look around for a name and see how many different ones are advocated, each fellow insisting that his is the only right one, I am led to think of the man who started out inquiring for the right road to heaven. The Methodists pointed to the signboard over their road and said, "This is the way." The Baptists said, "This is the true way." The Episcopalians said, "This road leads in the right direction." The Presbyterians said, "We have the way." The Catholics said, "We have the only way." And the fellow got so bewildered he said he'd stay where he was to keep from getting lost.

And so when I look at the many signboards and see pyorrhea alveolaris, alveolar pyorrhea, infectious alveolitis, cemento-periostitis, calcic inflammation, blenorrhea alveolaris, hemotogenic pericementitis, phagadenic pericementitis, chronic alveolitis, insterstitial gingivitis, etc., etc.,—when I read all these names and hear each man say that his is the only signboard that is right—I grow suspicious that I might take the wrong road, and in the language of the poet, conclude to "stay where I am at."

It was not my purpose in writing this paper to enter into any discussion of Rigg's disease itself, but merely to call your attention to some phases of this trouble differing from the usual presentations. Some of the following cases occasioned much worry:

Case 1. Patient, unmarried woman about twenty-six, exceedingly thin and nervous and of the distinctly bilious malarial type. The case seemed unpromising from the start, as her vitality was very low. Most of the teeth were very loose, some of them having already been lost and the tissues around the others exuding pus so profusely that the condition was really horrible. The worst ones were extracted at once and as vigorous work begun on the others as the state of her system would allow. After doctoring for some time on the tissues and dosing her systemically, I got the flow of pus stopped and sent her home to rest for a few weeks before returning. I thought the case would be doing nicely.

In about two weeks her dentist wrote me that the discharge of pus was very profuse. I thought maybe it was only temporary, but on seeing the patient again I found the case in no better condition than when I first saw it. This was discouraging. I then put her on tonic treatment and went to work locally again. The tissues yielded nicely, and this time I felt sure I had the disease under control and again sent the patient home.

All went well for about two weeks more when the tissues began to pain her and again the flow of pus started, if anything more profuse than before. By this time I was getting desperate. After weighing all things in the balance (as her constitutional resistance had to be kept in mind) I gave her calomel in broken doses, one-half grain each, until effect. This was to be repeated in five days, and again in five days more. In addition to this she took one-half level teaspoonful of salts and one-half level teaspoonful of phosphate of soda alternately every hour in a glass of water; that is to say, at 7 o'clock the salts, at 8 o'clock the soda, at 9 the salts again, and so on all day. This was done religiously. The salts was taken in cold water and the sodium phosphate in hot water.

Of course this was a severe drain and required all her strength to stand it, but at last it gave us most happy results. Not only are the tissues free from disease, but the woman herself is greatly improved in health. The whole secret was that the liver had become clogged and the whole system so poisoned from retained waste material that the tissues about the teeth became involved purely from the systemic condition. This treatment was continued for about a month and followed up with tincture of nux vomica and podophylin after each meal to tone up the exhausted system and prevent constipation from following.

No. 2. Another case associated with nodular rheumatism refused absolutely to yield to all local treatment until potassium iodid was administered.

No. 3. Another case: Patient, male, age 29, banker. Case yielded nicely to local treatment and seemed to be in perfect condition. I did not see the patient again for about two years, when I was astonished to see the ravages of the disease. Several of the teeth were so loose that immediate extraction was necessary. This time the local treatment seemed to have little or no effect. Patient was put on phosphate of soda and alkalithia, with copious draughts of hot water. After several weeks there was a slight improvement, but not enough to be at all satisfactory. As the liver seemed torpid, calomel was administered, and afterwards hydrochloric acid given freely. This produced a somewhat better effect, but still did not give the desired result. I then told the patient that there was no use talking, he had to give up part of his banking hours to outdoor exercise or give up not only his teeth but his health. He became thoroughly frightened as I meant he should, and betook himself to three-hour walks, interspersed with short runs to produce a copious perspiration, and drinking as much water as he could hold. After he went home the bag was vigorously punched for fifteen or twenty minutes and then several glasses of hot water taken during a hot bath. Of course he had been instructed at the outset to avoid the usual meat diet, etc. Now this gave us splendid results, so much so that both the patient and myself were happy and fully satisfied. Of course, the local treatment in all of its details was being carried on all the time.

The patient continued the hot baths and exercise to a limited extent for some time, then dropped both, as, unfortunately, all of us will do under like circumstances. It is almost impossible to get a man in a sedentary occupation to take proper outdoor exercise except for a few days or a few weeks at a time. I kept close watch over this mouth and stimulated locally the tissues constantly. In a few weeks they began to show unfavorable signs again. Thinking that this might be temporary I awaited further developments. In a few weeks more the mouth was in as bad condition as it was when we began the vigorous exercise, and was getting rapidly worse. One remarkable feature about the case is that no pus at all was obtainable by pressure on the gums at any time, and the roots were almost entirely free from deposits of any character. Patient was now thoroughly discouraged. I didn't feel so good myself. Previous to this the patient was thoroughly examined by a physician and pronounced sound. He always drank freely of water and did not indulge in alcoholic stimulants; did not drink even tea or coffee. Bowels were regular and free. The only explanation is that it was imperfect metabolism due to overtaxation of the nervous system. I was at a loss to know how to proceed. After thinking of all the drugs I had ever heard of, I determined, as nobody knew what colchicum did when introduced into the system, that I would use it on a case that I knew nothing about. So I began to administer this freely, leaving off all other treatment, both local and systemic, to see whether I would get any result. I certainly did not expect any, but I was agreeably disappointed. That mouth improved as by magic. In fact, I have never seen a case improve as it did. At first the medicine had a violent purgative effect, but this soon ceased. At that time I had but little faith in the permanency of the result, but it has now been more than five years and the conditions remain thoroughly under control.

No. 4. One of the most interesting and most unusual cases which has ever come under my observation from a dietetic point of view was that of a patient who had been treated for four years by several different practitioners and who had become thoroughly discouraged. Patient very nervous; gum tissue highly inflamed; comparatively no calculus present; a slight flow of pus about all the teeth. The closest questioning and examination revealed no systemic trouble to which I could attribute this condition. Some two months' treatment by both local and systemic measures was resulting very discouragingly to both the patient and myself. I finally asked the patient what he ate for breakfast, asking him to name each article of diet. I then asked what he ate for supper the night before, what for dinner and breakfast. I noticed that among other things he mentioned molasses each time, and on inquiry found that he nearly always ate a large quantity of molasses at each meal. On discontinuing the molasses the Rigg's disease was easily controlled. The case has now been under observation several years and not only the Rigg's disease, but the nervous symptoms have disappeared.

No. 5. Case refused to yield permanently to treatment. Severe bladder trouble (infection from gonorrhea) was present, for which patient never would submit to continuous treatment to entirely cure him—consequently the *Rigg's disease* has never been entirely cured, in spite of vigorous operating and careful attention.

No. 6. Patient, young married woman about 22 years of age. Disease had progressed exceedingly rapidly and proved very stubborn to control. No reason could be found for this. Examination by physician revealed ulcerated condition of the womb, evidently of long standing. A decided change for the better took place in the mouth after treatment of the womb.

No. 7. Woman, age about 40. In this case little or no tartar or pus was present. Case had been treated in the north and skilfully operated on sometime previously and discharged as cured. Inflamed condition rapidly returned and teeth were growing looser. Usual treatments failed to produce any considerable improvement. Analysis of contents of stomach revealed a great deficiency in secretion of hydrochloric acid. This was administered and only slight stimulation of tissues locally was done. No other treatment was followed and the case recovered rapidly.

No. 8. Patient, man about 60 years old. Several teeth had already been lost. This case was treated in the usual way. The cementem of each root was carefully scraped, necrosed bone removed and the usual local procedures followed, anit-uric acid diet and medicines prescribed. Tissues healed well. Later on, tissues showed signs of inflammation and instead of steadily improving grew worse. Thinking the patient was not following directions I questioned him closely and found this was not the case. As phosphate of soda and alkalithia had been prescribed, I thought I would add colchium, but still there was no improvement. Tartar lithine was substituted with same results. Patient assured me that he was adhering strictly to the diet and following all directions closely. As I was giving the closest attention to the local measures I was much puzzled. The inflammation not only did not diminish but grew steadily; I was worried, and when finally, in spite of my efforts, pus again began to flow, I was paralyzed. Patient was seemingly in extraordinarily good health. The closest questioning revealed nothing tangible as to past disease or present ill health. I finally became convinced (in spite of patient's assertion to the contrary) that there existed the taint of syphilis contracted possibly many years before. Accordingly, without letting patient know what was being given him, I put him on mercury and iodid of potash. The result was so immediate and so satisfactory that there can be no doubt of the correctness of my conclusion.

One of the most common of systemic conditions affecting Rigg's disease is constipation, and it is one of the hardest to control, especially chronic cases, and more especially those cases which have existed since childhood. We, as dentists, are not supposed to permanently cure these systemic conditions—this would be out of our sphere—but it is absolutely necessary that such conditions be controlled as far as possible during our treatment; and it is entirely within our province to administer such remedies as will serve this purpose, calling in a physician when, in our judgment, he is needed. If we were compelled to depend entirely on physicians to administer it, there would be very little medicine indeed given in Rigg's disease cases.

However, it would be the ideal way if every patient could first be rigidly examined from head to foot by a competent physician to discover the working order of the entire machinery. We could then proceed intelligently as to systemic conditions. Constipation would seem to claim our more constant attention than any other condition, for the bowels should always be kept well regulated during our treatment. When ordinary laxatives and exercise fail to keep them well open we have to resort to more strenuous measures. In stubborn cases of long standing I have often derived much benefit from the hot and cold water enaema. About a quart of hot water (or as much as the patient can retain) is injected and retained for some minutes; usually a little soda and salt are added. After expulsion this is followed by a half pint of cold water which is retained for one-half hour or more. In a few cases I have seen this treatment result in a complete and permanent cure, but unfortunately, in the majority of cases the bowels relapse into their old habits on cessation of treatment. Notwithstanding this, it serves our purpose to keep them open during the treatment until we get a healthy condition of the tissues in the mouth, and in these old chronic cases I do not hesitate to advise its indefinite use, for I am sure the patient will live longer and be better off to continue it for life rather than suffer from habitual retention of the faeces.

The most formidable of all conditions affecting our treatment of Rigg's disease is the nervous conditions of today.

Before this great factor all others sink into insignificance. We may mechanically control, to a large extent, the machinery of tubes and pipes of elimination and assimilation, but the wires of brain and thought and nervous action are beyond our ken. We may flush the bowels and kidneys and stimulate the skin to action, but we cannot control the overtaxed brain and nervous system. We may cause the patient to rest his body but rarely his mind. We control his diet—but not his thoughts. We may cause him to abstain from foods that injure digestion and assimilation, but not from worries and cares that wear his brain and harass his nervous system.

And now, along this line, I feel that I cannot close without expressing my sincere regret that so many good men in the profession still hold to the absolute local theory of Rigg's disease. I dislike to bring up a subject, a discussion of which usually results in so little real information and in each man simply holding "the same opinion still."

No subject in all dentistry has been so much discussed. Records show that a century and a half ago it was as vigorously discussed as it is today, and with the same widely differing conclusions. I can heartily sympathize with the man who is opposed to the systemic considerations, for a few years ago no one held more tenaciously to the local theory of Rigg's disease than I. I trust I may be pardoned the personal allusion in the following, which I give to show how firmly persuaded I was some years ago of what I thought was the folly of the systemic theory. In March, 1899, I read a paper before the Odontological Society of New York City, in which I took the ground that it was local pure and simple and argued strenuously against the systemic theory. I thought I demonstrated to the satisfaction of everybody the correctness of my views by showing before that society the mouth of a patient that I had treated altogether by local measures with the most pleasing results. The patient was rather feeble and in a greatly run down condition, and yet the result of the local treatment seemed all that could be desired. On the result of this case I was the recipient of most hearty congratulations from the Odontological Society, and if before this time there existed the slightest doubt in my mind that I knew all that there was to be known about Rigg's disease, this doubt was entirely and absolutely dispelled by the effusion of these congratulations. But this was more than ten years ago and time works wondrous changes! In this same paper I had denounced all removable bridge-work, stating in the most uncompromising terms that all removable appliances of whatever description were to be wholly condemned. I was certainly sincere in my beliefs and expressions. I thought I knew the systemic considerations of Rigg's disease to be foolish, and I thought I knew that only fixed bridge-work should be placed in any mouth where this disease was present.

With the passing of time these beliefs have been rudely dispelled and the conviction thrust painfully upon me that there were some things about both Rigg's disease and bridge-work that I did not know.

And just here I want to utter a word of warning to the extreme enthusiasts of prophylaxis. Great as is prophylaxis it will not cure all cases of Rigg's disease nor keep them cured. Be it far from me to belittle in the slightest degree the magnificent work done by Dr. D. D. Smith, but such vigorous and one-sided writings as his contain a great element of danger. They hold out the hope that all phases of Rigg's disease of whatever description and associated with whatever systemic complications, if amenable to treatment at all, can and should be treated by prophylaxis alone. This is far, very far from the truth! This teaching stimulates men to undertake to accomplish all that Dr. Smith claims, and being disappointed, they become discouraged in undertaking to treat the disease at all.

We need the earnest, forceful work of such men as Dr. Smith to encourage men and urge them on to do the utmost possible, but we also need the writings of such men as Talbot and Kirk, who reach out and comprehend the broadest possible field.

To my mind the time is ripe for the formation of an organization devoted solely to the study and investigation of this dread disease. We are met on every hand by the statement that we have too many societies already, but this we do know that the crying need of our profession today is an earnest, concentrated, intelligent effort to work out a more complete and effective way to cope with this trouble.

This work is not likely to be done in a general dental assembly; it must be done by a few men who will work with but one thought and purpose.

This paper has been written hurriedly and in an exceedingly desultory style and the chief object it has in view is to call your attention to the extreme need of concentrated, direct effort to work out a more intelligent way of dealing with Rigg's disease. I hope to see a society of very earnest men formed for this purpose and I hope you will help me in its organization.

PULP NODULES *

By R. R. Gillis, D. D. S., Hammond, Indiana

WHEN Dr. Lucas wrote to me several months ago asking me to write a paper for this meeting, his letter rather aroused my sympathy, for having had a little experience in preparing programs along similar lines, I realized what a difficult task was his. And through sympathy I made up my mind to help him in his difficulty, if I could.

In selecting the subject "Pulp Nodules," I did so thinking that as little had been written upon this subject as upon any subject interesting to our profession, and because in talking with my fellow practitioners on various occasions, it appeared that a few dentists, at least, seemed to know very little about pulp nodules, never having encountered them in their practice.

These two considerations, that little appears in our literature upon the subject and that some in our profession had had but little, if any, practical experience with what has been almost a pest in my own practice, made me bold to essay pulp nodules as a field wherein I might be able to write something that would reveal my own blind ignorance in the smallest degree.

Reduced to its simplest terms, a definition of a pulp nodule would be, "a body of calcific matter appearing within the body of the dental pulp."

There is no definite form in which pulp nodules appear, the scale of variance being from a speck of calcific matter as small as a grain of fine sand, to a bulk approximately as large as the combined size of the pulp chamber and root canals.

For the reason that the nodules are sometimes so small as to make no interference in the removal of a pulp, I believe that many cases pass unnoticed by the operator. In many cases the nodules are too small to be readily seen and too small to offer any appreciable resistance to the introduction of a broach into the root canal, and yet they are present in such numbers that if the removed pulp were rolled between the fingers, a decidedly gritty feeling would be noticed. Microscopic examination of such a case would probably reveal the presence in the pulp of a great number of minute bodies that would make the pulp look like a sack of gelatinous substance filled with fine crystal sand.

---

*Read before the Indiana State Dental Society, June, 1909.

On the other hand the nodule may be so large as to absolutely obstruct the entrance of bur or broach even into the pulp chamber.

You will observe in a preceding paragraph I said the nodule might present a bulk "approximately" as large as the pulp chamber. It never is actually quite as large as the pulp chamber or root canals—that is, it does not absolutely fill the space originally occupied by the living pulp.

This may be explained thus: The nodules occur within the body of the pulp, entirely imbedded within its structure and surrounded by a portion of the pulpal tissue. As the size of the nodules increase, the amount of its encasing tissue decreases, and when the nodule's bulk approaches the capacity of the pulp chamber the pulp has so far degenerated and lost its functional activities that the further development of the nodule is impossible, which would make it completely fill the chamber.

Some may object that sometimes we do find the pulp chamber completely filled. I grant that this is true. But when we find such a case, with the pulp chamber and sometimes even the root canals absolutely closed by an abnormal substance, that substance is secondary dentine and not a pulp nodule.

The form or shape of pulp nodules varies as much as their size.

The smallest nodules are quite regularly round, especially those found in the canals, but when the nodule is as large as an ordinary pinhead its shape begins to vary and seems to follow no definite rule. This is probably due to its close confinement within the unyielding bony walls of tooth structure.

Often in the root portion a number of nodules appear and as these develop and approach each other a continuous chain of nodules is formed. Such a pulp when removed is very stiff, and may be bent and curved and it will retain the new shape given it quite like a piece of annealed gold. To such pulps as these Dr. Black has given the name of "Lead Wire Pulps." When examined under the microscope such cases have the appearance of a gelatinous sack filled with several strands of this jointed grass commonly called "horse tails."

When the pulp is bent, the nodules change their relative positions at their approximal ends, and their hard bodies give the structure strength to retain the new shape.

Those nodules which occur in the coronal end of root canals and in the pulp chamber itself are more diversified in shape probably because they are here less constricted by the bony walls.

If they are very large they assume somewhat the shape of their pulp chambers; but in most cases there is no definite form, and I can describe their shape best by saying that it resembles the shape seen in slag and clinkers of an ash heap. It may be a homely comparison, but my mind presents no picture that will better depict their irregularity.

These larger nodules appear to be made up from numbers of small nodules massed together, but so firmly agglutinated as to make their separation impossible.

Their structure presents no definite lines of organization and under the microscope the lines and fissures that are seen in ground sections of pulp nodules are only the lines of demarcation between the individual nodules which constitute the mass.

Some cases present a nodule which has approximately filled the root canal, but which can be removed intact because of the straight conical shape of the canal. Such a nodule may have almost the appearance of a sliver of a toothpick that might accidentally have been crowded into the pulp canal, and its mass may have such strength that it will resist considerable strain without breaking. This apparently is a nodule which if removed at an earlier stage of its development would have exhibited the feature of a "Lead Wire" pulp; but now in its more advanced stage it is thoroughly calcified and cannot be bent like an annealed wire, but will snap in two when subjected to too much stress.

On the other hand, once in awhile we may find one of these nodules from the canals, which, under pressure, crushes into innumerable small fragments. In this case, the minute particles of calcific matter have not coalesced into a common mass, but each has remained a separate nodule approximating its neighboring nodules on either side and held in this position by the surrounding wall of pulp tissues.

In color, pulp nodules are quite uniform, being like a crystal of white tinged with light yellow.

The smaller nodules are almost transparent, but with increase of bulk they become opaque.

Unlike dentine their color is not affected by the decomposition of pulp tissue, for I have seen many nodules found in putrescent pulps which presented as clear an appearance as those found in pulps removed under pressure anesthesia. In a few cases decay and its resultant discoloration of the dentine had progressed to the full depth of the pulp chamber and yet a nodule found amidst all this discoloration and decomposition presented the same characteristic clear, semi-transparent color of all pulp nodules, when washed and cleaned.

The position within the pulp in which they are found is just about as indefinite as many of their other features.

Some have claimed that they appear and develop from the outer or odontoblastic layer of the pulp.

Dr. Peirce in an article in the American System of Dentistry suggests that "the terminal ends of the inner layer of odontoblastic cells give rise to pulp nodules."

This suggestion does not seem to be well founded when we consider that the layer of odontoblasts, or "membrana eboris," clings to the dentine wall rather than to the pulp tissue when a tooth is cracked open and the parts torn asunder.

The membrana eboris is the formative organ of dentine and in the adult life of a tooth will produce secondary dentine which will be continuous with the structure of primary dentine, but we cannot believe that this dentine forming organ is also the source of pulp nodules.

I have several cases wherein the nodules are absolutely within the body of the pulp and consequently could not be derived from the outlying organ, the odontoblastic layers of cells.

One or two writers have offered a suggestion or two along the lines of symptoms and diagnosis of the presence of pulp nodule.

From what I have seen in my own practice I am rather reluctant to make any statements along this line.

In only a few cases have I succeeded in diagnosing the existence of nodules in an offending tooth, and in quite a number I have failed to find them when expecting them, and in the vast majority of cases I have run onto them altogether unexpectedly.

If a patient presents for examination with rather an indefinite toothache which appears at unexpected and irregular times, yet has been recurring for a long time; no symptoms indicating a latent or incipient abscess, no swelling or pronounced pericementitis; pain excited by sudden thermal changes, more especially by cold, and such pain requiring possibly 15 or 20 minutes to subside; not being relieved by simply warming the tooth again; no disturbance noticed from sweet or sour or salt; no well developed cavity appearing in the tooth or, if any, it is one showing black or brown, indicating slow decay of long standing, but a cavity not especially sensitive to touch with the explorer; in fact, a case wherein by negative diagnosis you exclude the ordinary causes of toothache—then *maybe* you have a case presenting pulp nodules.

One other diagnostic point with me is that the patient should say he has been to three or four of my fellow practitioners who failed to find a cause for or give relief for this queer-acting pain; then I feel that it is another hoodoo case and I am in for a siege of treatments, and the patient is in for some more suffering before final relief can be had.

Since writing this part of my paper it occurred to me that the X-Ray might be used to advantage in diagnosing pulp nodules. Inquiry along this line from several persons who had knowledge of X-Ray work, brought no definite answers.

So with Dr. Ream, of Chicago, we skiagraphed several teeth in which we knew nodules to be present, two of the specimens being furnished for the work by Dr. G. V. Black.

The resulting skiagrams were a pleasant surprise. The forms of the nodules were easily made out from their shadows.

From these experiments, we concluded that the use of the X-Ray could be of great value in diagnosing pulp nodules.

So much for the difficulty of proper diagnosis before treatment is begun. Let us see the picture "after taking."

When you have attempted to lull a pulp into its last sleep by an application of some devitalizing preparation, and when after having taken every precaution to make the first application a success, the patient returns at the next appointed time, or sooner—and complains that "you have not killed that nerve, yet, Doctor," probably upon attempting to enlarge the cavity to gain entrance to the pulp chamber, you will find every surface of dentinal wall still responsive to the bur. You acquiesce to the opinion expressed by the patient; you make a second application of the devitalizing agent; you set a time for the next treatment, consoling the patient with the idea that "his nerves are harder to kill than neighbor Smith's," who recommended you as a painless dentist. Thus you save your reputation and at the same time you give your patient fortitude to endure his pains with the thought that his case is extraordinary and unusual.

At the third visit you may be able to reach the pulp chamber. The walls of dentine are not sensitive to the bur, but just as you reach the pulp chamber there is a decidedly sudden response. Another tack is taken and entrance attempted from another angle, but with no better success. As soon as your bur reaches the pulp chamber the patient is up in the air and you begin to feel despondent. Put in a third dose of arsenic, or if you are no friend of arsenic, and afraid to use so much, you may put in some harmless thing and simply hope that the previous dosing will complete the work. At the fourth sitting—and by this time you should be quite suspicious of that pulp chamber—you use the bur very cautiously, in fact the patient is in such a frame of mind that you can't work otherwise than cautiously on his tooth that has as many lives as a cat is reputed to have.

With lots of edging around with a small bur, one too small to jar the tooth and patient's nerves generally, you can probably remove all the dentine overlying the pulp chamber and there, lo and behold! is the cause of the trouble, a pulp nodule almost as large as the chamber.

I have spent a lot of words explaining this last diagnostic point, but it is the surest one of which I have knowledge. These large nodules are the only ones that can bring us any trouble, for the smaller ones do not choke the circulation of the pulp sufficiently to prevent absorption of the drug, nor do they interfere with the introduction of a broach.

These last paragraphs serve a double purpose for they also give a hint of what treatment a case of pulp nodules may require.

As before stated, the little nodules give no trouble. With them one can use an arsenous preparation and it will be absorbed, or he can use pressure anesthesia and the results obtained be perfect.

We experience trouble only in those cases in which the nodule is so large as to interfere with the circulation in the dental pulp.

Then our treatment must be with the usual drugs, but with the time prolonged. Our medicaments cannot be absorbed as readily as in the ordinary case, and a case of pulp nodules may require as many weeks as the ordinary case requires days.

After the second treatment the patient usually complains of little discomfort excepting while you are laboring with his tooth. It seems to be only the immediate pressure that excites pain.

When the covering of dentine has been entirely removed by working around the edges, a good plan is to use a real small round bur and continue circling round and round the nodule, always cutting the dentine rather than the nodule, for the dentine is the softer substance. With proper care this can be done.

Endeavor always to avoid downward pressure on the nodule, and likewise any rocking or lifting pressure until you have it well cleared on all sides. You can rest assured that your patient will inform you when your bur goes the wrong way.

When the nodule is cleared and you can observe a slight independent movement, a thin bladed excavator or chisel can be used to pry it off from its under attachment and once broken loose it may be turned round any way necessary to get it out.

Very often this operation is all that is necessary to give free access into the canals.

But sometimes even the canals are obstructed.

Then we are up against a hard proposition.

You have used arsenic till you feel absolutely sure the pulp is all dead, yet when you try to put a broach into the canal—the response would indicate much life. This response to touch like to the pain heretofore felt is due only to pressure upon the apical tissues conveyed to them by the solid mass of the nodule. The action is like trying to push a cork into a bottle full of liquid.

Something must give. In our tooth, the tissues surrounding the apex necessarily must accommodate the pressure from within the root canal, and being already congested, a very slight increase of pressure causes a mighty sudden severe pain.

Just here I will digress a moment and ask if any here realize how much liquid can be driven out of the apical end of a root by the friction heat of a bur working in the tooth crown.

If I should say two good sized drops most of you would think my story stretched. That is not enough in some cases. To satisfy yourselves try this experiment: Next time you extract a single-rooted bicuspid that has been aching, into whose pulp chamber no previous opening has been made, keep the tooth and as soon as the patient is dismissed, dry the apex of the root on a napkin, holding the tooth so you can observe the apex. Begin using your bur in the cavity as you probably would use it in a tooth in the mouth. Soon you will see blood come from the canal. Dry this off and continue the burring, drying off each drop that appears. I feel safe in saying that when you have tried this experiment a few times you will have more consideration for the next tooth whose cavity you try to excavate in preparation for any operation.

Some preach that in the condition under consideration, namely, canals filled with pulp nodule, we should employ sulphuric acid, 50 per cent. or so; neutralizing it after a few minutes or days with sodium bicarbonate.

Some even practice that way, too.

I think the preaching erroneous and the practice rather dangerous, especially if that powerful drug be left sealed within the tooth for several days.

I can't persuade myself that we get the desired result with sulphuric acid, and prefer to save all of mine for pickling crowns.

Did you ever try to dissolve a pulp nodule in sulphuric acid? No? Yes? Did you succeed? No! You can't do it; at least, not within a reasonable length of time, and anyhow, the acid will have a deeper effect upon the dentine than upon the nodule.

Trying the thing out, with dentine, nodules and old dry pulp tissue all subjected to the same treatment, showed me that the pulp tissue was the part most appreciably affected, and that it was thoroughly disintegrated in a comparatively short time.

This is getting so long drawn that I'll leave further consideration of this point for the discussion.

All this leads us to the consideration of the development of the pulp nodules—and likewise to a field of theoretical speculation.

The development of calcific masses occurs in other parts of the body under certain pathological conditions therein; but none of these calcifications present quite the characteristics of a pulp nodule.

We have areas of calcific matter appearing in the areola of lung tissue in tuberculosis and calcific deposits in the walls of blood vessels producing the condition known commonly as "pipe stem" arteries; in advanced age we sometimes find the hyaline cartilages somewhat calcified.

But in all these instances, calcification is the sequence of impaired vitality and approaching senility or nature's method of making tolerable some dead tissue which has been retained within the body.

The calcific nodules found in the dental pulp can scarcely be attributed to the same causes.

In our college courses, we were taught that pulp stones were a development of later life and were principally an accompaniment of dental disorders in the mouths of persons past the prime of life.

My earliest experience with pulp nodules made me question the accuracy of such teaching, and as case after case presented itself in the mouths of patients yet in their 'teens, I decided that something besides advanced years was the cause of pulp nodules.

One of the first and largest nodules that was ever my lot to find was in a lower first molar of a boy not yet fourteen years old, and within the last few weeks I have beaten that record by finding one big nodule and two smaller ones in the upper first molar of a ten-year-old boy.

Just here I might mention another find.

While talking recently with one who is an authority unquestioned on most all dental topics, our subject turned to the finding of nodules in young patients. To relieve a question which had been in my own mind for a couple of weeks, I asked him if he had ever found or heard of pulp nodules in the temporary teeth. His answer was a pleasant surprise. He *had* found them in such cases. But in all our literature no mention is made of pulp nodules in the temporary teeth; consequently, I had been much perplexed over what I had recently found in the two lower second molars of a little five-year-old patient for whom I was then treating several teeth.

I had treated quite a goodly number of baby teeth, but this was the first case presenting the condition so frequently found in the permanent dentition.

So without hesitation, but with some fear of having my veracity questioned, I can say that pulp nodules do appear in the baby teeth, and this is another evidence that old age is not essential to their formation.

Now to get back to our discussion of the cause, some claim that it is due to long continued irritation that excites a pulp and makes it form those bony nodules.

This theory is only partially acceptable.

Of course, we have had external irritation in all those cases of extensive decay which is the usual conditions under which we find pulp nodules; but the usual condition of extensive decay wherein pulp nodules are not found, are so often presented that we are led to believe that we must seek still further for a cause.

And on the other hand, we find the pulp nodules frequently when there is no extensive decay and this would indicate that the external irritation of decay is not essential to their formation.

Dr. Black reports a case wherein nodules were found in the anterior teeth free from decay, extracted from a mouth in which the posterior teeth were decayed and badly abraided. If irritation caused these nodules in the anterior teeth it was of a sympathetic variety far-fetched.

If further allusion to personal practice will be pardoned, I will cite two cases under this last phase of the question.

In one case I wished to construct a Richmond crown for an abutment on a cuspid and accordingly used pressure anesthesia to remove the pulp. Everything worked out nicely, but as I removed the extracted pulp from the broach, a granular feeling was noticed between the fingers, and under the microscope we found just two minute pulp nodules in the apical one-eighth inch of the pulp. In no other portion of the pulp could be seen any indication of a pulp nodule.

In a second case, we attempted to devitalize a second upper molar to prepare it as a bridge abutment. Only the slightest discoloration was present in the occlusal pits—not even sufficient to need a filling under ordinary circumstances. The devitalizing paste was applied in the manner usual in such cases—namely, drilling a small pit to reach the dentine. Upon the patient's return we were unable to go much deeper than at the first treatment for the pulp was still "very much alive."

At the third sitting we did succeed in opening the pulp chamber sufficiently to allow the passage of a smooth broach to explore the chamber. The pulp did not respond to simple touching, but I found in its body a hard obstruction that explained satisfactorily the slow action of the drug.

These two are examples of other like cases wherein I know from previous history that there had been no long continued irritation or even pain of any kind present in the tooth.

Sometimes I almost believe that certain patients have an idiosyncrasy for pulp nodules. In one case we found nodules in five teeth in one mouth, and in this woman's son's mouth we found them in three teeth.

However, from this circumstance I will not conclude that pulp nodules are hereditary, for I don't like to blame ancestry for our abnormalities and defects. Nature is exacting in all her laws; but with all she is very kind, and if let alone under favorable environment will correct all abnormal conditions causing the defective to become perfect.

We cannot hope to arrive at any absolute solution of the question of cause, and all our explaining is only theory, for in this quest we are handicapped by seeing the case only after all is done and when by extraction the process of development is ended. Neither do we know definitely whether we have found a particular case in its early stages or when far advanced.

By comparison of many cases, I believe we are justified in supposing that at first only a few minute granules appear and that as time goes on these are increased in number, that further on in the process some of these granules coalesce and form a larger and larger mass till finally the capacity of the pulp chamber and root canal is reached.

And the question of cause is unsettled and I cannot hope to explain it.

That will be another thing left for the discussion to bring out.

This paper is not written with the expectation of settling any "mooted questions," but simply as indicated in the prefacing remarks, to help Dr. Lucas.

DISCUSSION

Dr. N. W. Hiatt, Marion: I wish to congratulate the essayist for the excellent paper he has just read, for I certainly have appreciated it, as I am sure you all have. The subject of Pulp Nodules, while not a new one, is a subject that there has been but very little written upon, and yet it is a condition that has given all of us a great deal of trouble.

As Dr. Gillis has said, there is very little written in our text books regarding this condition, so that it leaves it to our own personal experience, when it comes to diagnosing cases of this kind.

The conditions and symptoms brought about by Pulp Nodules, and the conditions and symptoms due to secondary dentine, are, as far as I am able to determine, the same. It is not an uncommon thing to find a pulp chamber entirely filled with secondary dentine, some times extending into the nerves cavities, entirely obliterating them, at least, as far as being able to open them is concerned. This condition often exists in teeth where there is no exposure of nerve, either from caries or erosion, and I have found both the nodules, and secondary dentine in teeth of this kind.

That these conditions exist as a result of sympathetic influence, I have no doubt. I have here a specimen of a third molar, that was the only molar, and in fact the only tooth in the lower jaw that was apparently sound. There was no decay, and the gum tissue was perfectly healthy, but the remainder of the lower teeth were bad, only the roots remaining. The second molar next to this tooth had been out several years, and when the patient told me this ''Wisdom Tooth'' was aching, I was inclined to doubt it, and asked regarding the other teeth. As the mouth was to be prepared for a plate, this tooth was removed along with the remaining roots, and to satisfy my own mind as to the cause of the trouble, I ground down to the pulp chamber, and found the opening filled up with Pulp Nodules, some of which are in the pulp cavity now, and some three or four are lost. This was certainly a case where sympathetic influence was responsible for the trouble. I believe that pulp nodules, and secondary dentine are one and the same thing, only being deposited in different places. I have seen secondary dentine almost filling the pulp chamber, and have only an attachment by a very small neck to one side of the dentine, a hoe excavator removing the entire piece very easily.

The essayist speaks of decomposition not discoloring nodules as it does dentine. I have never seen a nodule that was discolored, neither have I seen secondary dentine discolored, and I believe it is because they are anatomically the same.

As to the organ that is responsible for these formations, I am not prepared to say. My only investigations have been my personal experiences in cases as they come in my practice.

Burchard says, in Dental Pathology and Therapeutics, that secondary dentine is a deposit of dentine upon the walls of the pulp chamber as the result of pulp stimulation, after the pulp has enjoyed a physiological period of rest from dentine formation, and that it is always attached to the dentine. The same author says, that pulp nodules are masses of more or less translucent calcific material, apparently the result of secretion, having a fairly definite histological structure, differing from that of dentine, and occupying a position within the pulp substance.

In a great many cases I have found a thin layer of bone lying directly on the coronal portion of the pulp, with no attachment to the dentine, and not surrounded with nerve tissue. Is this a Pulp Nodule, or is it Secondary Dentine? It is not attached to the dentine, nor is it incased in the pulp tissue. As to diagnosing the troubles that originate from these deposits, I agree with the essayist. You find them when you don't expect them, and you don't always find them when you do expect them.

As to experiencing trouble in devitalizing pulps where nodules are present, I haven't had much trouble along that line, but have had trouble in removing the nerve. I have had a great deal of trouble with devitalization, where secondary dentine had formed. I have had trouble with nerves when devitalizing, that were completely exposed, and where arsenic had but very little effect, in some cases taking two or three weeks to devitalize. There was no deposit of any kind in these cases.

As to the use of sulphuric acid, for opening the roots where deposits have formed, will say, that I have used a 40% solution in a great many cases, and have not experienced any trouble that I know of. A fresh solution should be made quite often, as the evaporation increases the strength of the acid, and you will be using a full strength solution in a little while. I consider it very valuable in a great many cases.

As to nodules being found in the temporary teeth, I have never seen it, but I do not doubt that it forms there. I have found it in the permanent teeth of very young patients, where the pulp chamber would be almost filled.

Dr. C. W. Throop, Muncie: I want to say about children's teeth, I frequently run across these calcified tissues in the temporary teeth and they are a great deal of trouble.

A little cocaine will enable one to remove them. I find that these are apt to be found when there has been an irritation of the pulp and nature seems to have a tendency to build up a protection over this pulp, and for that reason we do no encounter trouble so much from exposed pulps until in masticating they press this formation into the tissue. I find a good many in the children's teeth that I have to take care of in my practice.

Dr. J. P. Buckley, Chicago: I am sure that I cannot add anything to the paper, but surely any society ought to be proud of a young man who can prepare as scientific a paper as the one we have heard and present it in such a clear and scholarly manner.

I do not know why we should not find pulp nodules in the younger individual because I believe that it is due entirely to external irritation; that the cells which are capable of forming this calcific material are just sufficiently irritated to stimulate. If you overstimulate the cells the tooth will ache, but if you just irritate the cell sufficient to cause stimulation the nodule is the result. I think it was Barrett who claimed that the nodule which forms within the pulp tissue is due to an odontoblastic cell which strayed away from the outer layer of the pulp into the pulp tissue itself, and if you have that stray cell in the pulp stimulated slightly to cause it to throw out this calcific material, the nodule will be the result.

The essayist made the statement that it is only the large pulp nodules that usually cause trouble. I believe, generally speaking, that is true, but I think he will probably agree with me when I say that occasionally small nodules cause nearly as much trouble if the nodule happens to be over the pulp canal. I have had just as much trouble with a small nodule where it was so situated as I had where the calcific material was sufficiently large as to almost completely fill the pulp chamber.

We cannot diagnose these conditions definitely unless we use the X-Ray, the only definite means of determining the presence of the pulp nodule. When a patient has neuralgia and we have tried to find the cause by other means, and failed, we can suspect a pulp nodule. When we try to anesthetize a pulp and fail, when we try to devitalize and fail, we can again suspect the presence of the pulp nodule, but because either an anesthetic or a devitalizing agent does not act as it usually does act is no absolute proof of the presence of the pulp nodule.

There is absolutely nothing that I can add to this paper, and I am not going to take up the association's time when it can be used more profitably.

C. A. Priest, Marion: I would like to ask the essayist if it is true that where you find pulp nodules in one tooth, that in most any other tooth of the same mouth will you not find such nodules? I have found that in cases where I find pulp nodules in one tooth I would invariably find them in the other teeth in the same mouth.

Dr. R. R. Gillis (Closing discussion): I wish to thank Dr. Hiatt for the consideration he has given and am only sorry that Dr. Stoeckley is not here, because I am sure his discussion would be something equally well worth while.

Dr. Hiatt gives the idea that secondary dentine and pulp nodules are practically the same thing. I cannot agree with him from the experience I have had with the two. Secondary dentine is slightly yellowish, of a darker color, while the nodule almost invariably has a color lighter than dentine; it is more translucent and clear like enamel, and clearer by far than dentine. And then the fact that they appear at different points in the pulp, one within and the other outside, leads me to believe they are not the same formation. The quotation that he gave from Dr. Bircher would bear out my statement in that regard.

He spoke of finding several nodules as an independent mass within the tooth. I have also found cases where I thought it was an independent mass, but where I could explain why it might be severed when I saw it. Probably instrumentation had torn it loose from the underlying mass and my experience shows that there is always a little bit of pulpal tissue reaching around the pulp nodule.

In speaking of sulphuric acid, the sulphuric acid may be beneficial. I will not say it cannot be used, I only say I do not use it. But if you do use it you are not dissolving the pulp nodule, you are possibly freeing the nodule from the surrounding bone wall of the tooth structure. I have said very little about the treatment, because everyone has his own method and I was afraid I would simply start something. If you have found pulp nodules you have your own way of dealing with them and that is all that is necessary.

Dr. Priest asks, if the nodule appears in one tooth, will we find it in the other teeth in the same mouth? I believe we can justly expect to find them in the other teeth in that mouth. Of course, more often we will be treating just one tooth and we may find a nodule and find no occasion to open up others. I always make a record of the cases I treat, and if the patient comes back to me I sometimes find pulp nodules in the other teeth, especially if you have a great deal of abrasion in the mouth. But where there is a great deal of abrasion you can expect to find great quantities of secondary dentine as well as pulp nodules.

I am glad to hear from Dr. Throop that he has found pulp nodules in the temporary teeth. I agree fully with all that Dr. Buckley said and I think possibly I may have read a little bit fast in regard to the size of the nodules which might cause trouble. I believe the paper said it is usually the larger ones, but any nodule will cause trouble if it interferes with the circulation in the pulp, and if a small one had formed at the mouth of the canal it would cause trouble.

The cause has been laid at the door of irritation, slight irritation long continued, and probably that is the cause, but it is not from exciting something within the pulp so much as it is that the trophic nerve is affected, and it may be caused by something outside the tooth. I brought along a number of specimens mounted to look at tomorrow, and I think you will find something interesting in regard to pulp nodules among these specimens.

I wish to express my thanks to Dr. G. V. Black, Dr. F. B. Noyes and Dr. F. K. Ream for the valuable assistance given me while preparing this paper.

THE PRESENT STATUS OF STOMATOLOGY *

By Edward C. Briggs, M. D., Boston, Mass.

IT is my pleasurable duty to address you in welcome to the Sixtieth Annual Session of this Association. Our able and untiring Secretary has prepared the feast, and it promises to make this year's meeting second to none which we have had.

At this time it is in order to look back, with what complacency we may, on the progress in our profession during the past year, and to outline some of the hopes and aspirations for the future.

There are two great incentives to the profession to grow and develop. One is the desire of the true physician to increase his power to prevent or heal suffering—to keep abreast of the world's progress in general. The other, to gain for his specialty that recognition in a social way which will satisfy the hearts of those already in practice and offer to the youth contemplating a life work a profession in the practice of which there shall be nothing incompatible with the highest self-respect.

While new and increased attainments in the first case help to some extent, in the second it is by no means proportionate, and I doubt very

---

*Chairman's Address before the Section on Stomatology at the Sixtieth Annual Session of The American Medical Association, 1909. Published in THE DENTAL SUMMARY by special arrangement with the *Journal American Medical Association.*

much whether, even with all knowledge, with every practitioner a doctor of medicine, we should find our condition improved otherwise than in the direct satisfaction in our hearts over our increased efficiency. Perhaps if we faced the condition squarely and honestly we should more easily and readily find the cure.

I venture to say that we suffer much from the term "dentist" and if we could shake that off, even as the surgeon has shaken off his original appellation of "barber," we could more easily claim the recognition to which our attainments entitle us. And consider our attitude in regard to nostrums and inventions! Here are men practicing a liberal profession constantly exhibiting a selfishness which, like other vices, generally proves a boomerang; instead of gaining in reputation or financial returns, such men too often lose both and do much to lower their profession. We have many bright and shining lights in this dark way, but, alas! the rank and file are constantly bringing on us the judgment that ours is a profession of sordid money-grabbers. Yet have any of our inventors of remedies or instruments who have patented their inventions for the sake of financial returns ever reaped their desired reward? Have they not rather received pitifully unsatisfactory returns and lost forever the opportunity of being enrolled in the list of the benefactors of their profession and of mankind—a list which is a long and glorious one in the other branches of medicine?

But let us turn to the contemplation of the steps which we as stomatologists have been making the past year toward the goal of being perfect physicians to the teeth and their environment. Much progress has been made along the lines of greater appreciation by us, by our fellows in other branches of medicine, and by the public generally, of the part which a perfectly equipped oral cavity plays in the preservation of the general health of the individual.

Fletcher's teachings have received prominence and general acceptance. He has entered on a missionary work in New York which not only improves the physical and moral condition of those whom he teaches, but also brings into greater prominence the importance of the stomatologist in the conservation of health and morality.

Perhaps one of the most notable efforts for the advancement of the profession, both among ourselves and the laity, has been the formation of the Dental Hygiene Council of Massachusetts, which is being followed rapidly by the formation of like societies in other states.

I quote from Dr. Potter, who has ably seconded Dr. Woodbury in the development of the Council. He states the objects of the council to be (a) publication and distribution of literature on oral and dental hygiene; (b) urging the work of examination of school children; (c) giving advice to educators and others as to practical methods of promoting dental hygiene; (d) assisting in the formation of dental dispensaries where dental services can be had at a nominal cost; (e) establishing lists of young practitioners who are willing to work within the means of persons of small wages; (f) calling attention to the way in which the condition of the teeth enter into the problem of the general health and physical development of the community.

They have established a dental hygiene exhibit which has been shown in a number of cities not only in Massachusetts, but in other states, and which has made a deep impression on layman and scientific student alike.

By means of casts, slides, photographs, etc., the council aims to bring before the public and the profession the importance of dental hygiene in preventing disease and building up sound minds in sound bodies.

The bacteriologist has made us familiar with the *Staphylococcus pyogenes*, pneumococcus and spirochete, which flourish so successfully in the unhygienic mouth and breed disease far reaching and destructive in its influence.

The reading of the opsonic index and the vaccine treatment, both the autogenous and stock vaccine, has enlarged the scope of the stomatologist and bids fair not only to increase his usefulness to his patients, but also his importance as a true physician to the diseases of the oral cavity. The pendulum is swinging away from the point at which all dental troubles were treated mechanically and where the stomatologist was only an operator; and maybe will swing too far and we shall hear of a vaccine for every ill, and be advised to throw all instruments into the scrap-heap.

Not long ago I even heard a speaker state that interstitial gingivitis had been cured by vaccine, while the teeth were still covered with scales. I fear this is going pretty fast, but it shows how the germ theory has taken possession of us!

Speaking of interstitial gingivitis, I am minded to make that a text for a short sermon on the cruelty of some obstructionists, both to themselves and to the profession, in opposing, simply for the sake of opposing, the efforts of some to raise our scientific standard. This is shown by the opponents of the term "interstitial gingivitis." They have nothing better to offer, yet, with the perversity of the bucolic, still adhere to the totally unscientific name of Riggs' disease. I am sorry to say that there are many bitter objectors to the term who do not even understand the meaning of the words.

I have heard within the year an eminent educator in our profession jeer at the use of "interstitial" because "it meant the interstices of the teeth, and as the disease was not always between the teeth the term was a misnomer." Let me ask all such obstructionists to look up the definition in their medical dictionaries before they denounce!

Now, there have been few new remedies added to our list, but there are some important applications of old ones. Leary's IKI solution (iodin, 1 part; potassium iodid, 2 parts; water, 100 parts) as an antiseptic for the bacteria of the mouth seems to be a distinct advance. Both ingredients have been used individually and in other connections, but this particular mixture seems a most happy one.

Again, the use of bismuth paste after the manner suggested by Beck proves to be helpful to the stomatologist in the treatment of antrum diseases, alveolar abscesses and the pus pockets of interstitial gingivitis.

It seems to me that more attention should be paid by us to the production of anesthesia, both local and general, for painful operations, such as the preparation of roots for crowns, removal of nodules from tooth roots, and excavations for filling; for more thorough study shows little or no danger in the use of ethyl chlorid in the production of general anesthesia and cocain or eucain, or both combined, in local anesthesia by injection.

The unfavorable cases reported in the use of these agents are now pretty conclusively shown to be due to impure preparation or gross ignorance of fundamental principles on the part of the user.

We should be too intelligent to condemn the use of a drug because some one has had an unfortunate result from the use of an impure preparation or from administering it to a patient already in a critical condition from heart, kidney or lung diseases, or from the employment of toxic doses when the therapeutic doses have been called for.

Since this address is merely introductory, I have purposely made it very brief, for we have many papers of special scientific import and I know you must be anxious to get to them.

HIGH PRESSURE ANESTHESIA*

By Robert Homer Welsh, D. D. S., New Orleans, La.

It is my opinion that no method introduced in recent years has been of more real value to the careful operator, or of more comfort and benefit to his patients, than high pressure anesthesia.

The introduction of this method has supplied a long felt want to those that felt the need of a more satisfactory and scientific method of producing anesthesia of tooth structure, yet its slow adoption and the half-hearted manner in which it has been employed by the profession in general, would indicate a distrust or uncertainty of results wholly inconsistent with its value. Devitalizing agents have been employed for so many years, producing more or less satisfactory results and the ease of applying such applications have exaggerated the seeming difficulties of the high pressure method, without suggesting the many advantages to be derived from its use, to those that are content to let well enough alone and drift with the tide.

My object in writing this paper is for the purpose of stimulating interest among these and bringing to their notice what I consider one of the most valuable aids in the practice of dentistry.

KIND OF INSTRUMENT USED

There is in my opinion, no difference what instrument we use, the object is to use one that will maintain high pressure with the greatest amount of ease to the operator and patient. Having selected such an one, it behooves us to thoroughly familiarize ourselves with its manipulation, as often failures are attributable to faulty manipulation alone.

---

*Read before the Louisiana State Dental Society, 1909.

CONFIDENCE OF PATIENT NECESSARY

In this, as in all other operations, it is advisable, in so far as possible, to obtain to the fullest degree, the confidence of the patient. Try to impress upon them the fact that you are not going to hurt them, enlist their aid to such an extent that you can rely upon them; often their lack of confidence causes failure.

We are all familiar with that class of patients that insist that everything hurts them, when we are sure it does not; in such cases we might be persuaded to use a little more pressure or liquid than is necessary, thereby causing pericementitis if removing pulp, or strangulation if excavating dentine. Such procedures invite failure.

INDICATIONS

The use of high pressure is indicated in any case where we would operate painlessly, whether it be for the purpose of inserting the simplest filling or removing the pulp.

HOW USED

Whenever possible use the rubber-dam, and as the most important point is a perfect pit, the best way to accomplish this is to use sharp burs, drill until healthy dentine is reached, always drill parallel with the tubulae, having previously put about five drops of the solution to be used in the syringe, insert the point in the pit with a slight rotary motion, keeping the instrument parallel with the direction of the pit, when sure that the point is properly inserted, exert slight pressure at first, gradually increasing same until the maximum amount has been reached, usually from one to two minutes is all that is required to produce anesthesia.

POINTS TO BE AVOIDED

Do not use too much pressure, nor have too much of the solution in the syringe, usually from one to three drops is all that is necessary to produce anesthesia; any more is dangerous. If the cavity is unfavorably located, I do not hesitate to drill pit at most accessible, unconspicuous location; often this is the better plan, as when we have more than one cavity we can close pit temporarily, using as a point of injection over and over.

Immediate root filling is not advisable, as we usually have hemorrhage more or less profuse, following removal of pulp by this method. Soreness is often caused by a blood clot, due to checking hemorrhage too soon, and for this reason I think we should rather encourage the flow of blood instead of stopping with styptics or adrenelin. Of course, throughout this method we should observe *ascpsis.*

REPORT OF COMMITTEE ON DENTAL SCIENCE AND LITERATURE*

By G. C. Bowles, D. D. S., Chairman, Detroit, Mich.

TAKING up the review of current dental literature where it was dropped in last year's report, the first article claiming attention is from the pen of Dr. Edward C. Kirk, *Cosmos*, August, 1908, entitled, "The Constitutional Element in Certain Dental Disorders."

In a paper of eight pages the words "nutrition," "malnutrition" or "nutritional" appear at least thirty times.

The liability to disease infection stands in inverse ratio to the health status of the individual, as measured by the nutritional standard, those with impaired nutrition manifesting a degree of susceptibility in proportion to their deficiency of health or degree of malnutrition.

Malnutrition lowering the vital resistance of the tissues is the predisposing cause of pyorrhea alveolaris. Malnutrition manifesting itself by the presence of the acid phosphates of sodium and calcium in the saliva and the buccal mucus, is the cause of chemical erosion of the teeth.

All elements combine in definite proportions by weight. Oxygen is essential to life. Delivered to the tissue cells by the hemoglobin of the blood it renders that chain of synthetic mutations termed assimilation, and the corresponding series of analytic chemical changes termed dissimilation, which together constitute the process of metabolism.

The amount of oxygen available for this process is determined not by the capacity of the lungs nor by the rate of inspiration, but by the carrying capacity of the hemoglobin circulating in the blood stream. Therefore, the nature and the amount of the food supply as related to the oxygen supply, becomes one of the important fundamental features of the nutritional process.

Carbohydrates are readily oxidizable, the mal-products of their complete combustion are carbonic acid and water. Proteids derived mainly from the animal kingdom, possibly from lack of direct affinity of nitrogen for oxygen, are less readily oxidizable, their normal end product is urea, a highly soluble, bland and non-irritating nitrogenous compound. Imperfectly oxidized, the end products are relatively insoluble irritating compounds, of which uric acid is a type.

Because of their insolubility, these imperfectly oxidized waste products are readily deposited from the blood stream in the various tissues and organs of the body, giving rise to areas of local cell death which become the seat of infections and local lesions more or less grave.

Pyorrhea alveolaris and chemical erosion are local manifestations of this condition. Those suffering from erosion are characterized as excessive carbohydrate eaters, while those of the pyorrhetic class are victims of underoxidized proteid feeding.

---

*Read before the Michigan State Dental Society, June, 1909.

With a limited oxidizing power and on a mixed diet of carbohydrates and proteids, the superior affinity of carbohydrates for oxygen utilizes the available supply, leaving the proteids imperfectly oxidized with the formation of irritative end products, a condition which is promptly relieved either by eliminating the proteids altogether or by sharply reducing the carbohydrate moiety to a point which will leave sufficient available oxygen for the proper metabolism of the ingested proteids.

When the kidneys are no longer able to eliminate the acid phosphates, formed by the excess of carbon dioxid uniting with the basic phosphates of the plasma, the buccal mucous follicles take on the eliminative function and their secretion contains the acid phosphates of sodium and calcium both highly destructive of tooth structure.

Dr. Kirk has been treating these conditions systemically with results both surprising and gratifying. Those interested will find his treatment in the August, 1908, *Cosmos,* page 810. In the September, 1908, *Cosmos,* page 947, Dr. Eugene S. Talbot treats the same subject in a paper entitled "Acidosis, Indicanuria, Internal and External Secretions—the Effects upon the Alveolar Process and Teeth."

Dr. Talbot, of course, treats the subject from the standpoint of evolution and degeneration. He does not go into the various steps by which the carbohydrate and the proteid food-stuffs are converted into irritating acid end products, as does Dr. Kirk, but refers to an earlier paper treating (probably) this phase of the subject. He makes "Acidosis," however, responsible for many grave pathological conditions both local and constitutional. Another factor responsible for many systemic as well as dental lesions is indicanuria, manifested by a blue coloring substance in the urine. It is supposed to have three sources, the chief being intestinal fermentation and putrefaction of nitrogenous substances. It is one of the great sources of auto-intoxication. Toxins in the blood resulting from acidosis and indicanuria are carried to all structures of the body. The dental pulp and the alveolar process being end organs and transitory structures unable readily to dispose of the blood, accumulate the toxins, and disease follows. Dr. Talbot believes the teeth are broken down from within as well as from without. He says the pulp secretes or excretes toxins from the blood which pass through the fibrillae and destroy them, soften the tooth partially or the dentin, and enamel entirely and destroy the cement substance between the enamel rods.

How does he know the pulp excretes these toxins? He looked for them and in four teeth out of six thousand cracked open and examined during the past ten years, the pulps gave an acid re-action.

It will be seen, therefore, that toxins and acid conditions may circulate freely through the tooth substance, by way of the fibrillae, and decalcify tooth structure.

This is Dr. Talbot's "Lowered Resistance" theory. It is interesting, and if true, is of the very first importance.

In the *Cosmos* for October, 1908, Dr. Julio Endelman, in a paper entitled "The Uric Acid Problem as Related to Pericemental Inflammation," tells how, in his opinion, these products of incomplete oxidation give use to pyorrhea alveolaris in individuals of the gouty diathesis. He says: "The salts of uric acid (a protoplasmic poison) are maintained in solution in the blood by virtue of the alkalinity of that fluid and they are precipitated by acids, or at least by substances of a lower degree of alkalinity than of the solvent in which they are present.

Ordinarily, under conditions of rest, or of slight activity, all articulations, their ligaments, synovial membranes, articulating cartilages, and the fluids in which they are bathed, are of an alkaline reaction.

Under conditions of activity the reaction changes to one of less marked alkalinity, relative acidity, or in extreme cases, to one of actual acidity.

A slight malocclusion of a tooth causes it to perform an amount of work in excess of its share. This leads to excessive oxidation, decrease of alkalinity, and probably to the formation of lactic acid through the breaking down of complex proteic molecules of the pericemental membrane, and finally to the precipitation upon the areas of greatest stress, of the uratic salts. The deposited urates create a locus minoris resistentia, and together with pyogenic germs are responsible for the formation of pus, which being more alkaline than the blood, causes a precipitation of the calcium phosphates that are frequently found to be a component of the gouty deposit.

The pericemental infection will terminate in pericemental abscess if the pyogenic invaders are staphylococci, and in pyorrhea if the streptococci predominate.

Splinting of the affected teeth is therefore of primary importance in this form of pyorrhea.

There is an agreement among the writers quoted that pyorrhea has its inception in faulty metabolism resulting in irritating end products being deposited upon the roots of the teeth and thus forming focci for pyogenic bacterial infection, being thus of constitutional origin. And this may be regarded as the present trend of thought if not actually the accepted belief on the subject of the leaders whose views are expressed in our current literature.

The causes influencing individual immunity or susceptibility to bacterial infection are outlined in a paper by Dr. Arthur M. Merritt, in the January, 1909, *Cosmos,* entitled "The Protective Substances of the Blood in their Relation to Pyorrhea Alveolaris." He says that we can no longer regard inflammation as a destructive process. Adami describes it as the series of changes constituting the local manifestation of the attempt at repair of actual or referred injury to a part. It is of the utmost importance, therefore, that we keep clearly in mind the fact that inflammation is a physiological process, physiological in so far as it is the calling into action of properties normally possessed by the tissue involved.

Given the presence of pyogenic bacteria within a tissue and every agency at nature's command is employed against the irritant, such as the slowing of the blood current within the affected zone, a dilatation of the capillaries and veins, the migration of the corpuscles, both red and white, accompanied by a fluid exudate of varying composition according to the nature of the infection, the tissue involved and the reactive ability of the individual. This exudate has some bactericidal power and a diluent action limiting the effect of the bacteria, by washing their toxic products out of the lymph circulation. Other exudate acting directly upon the bacteria themselves are the agglutinins possessing the power of agglutinating, or holding together in clusters the bacteria, and also in limiting the spread of infection. But more than all else, and absolutely essential to phagocytosis, is required the presence of still another group of substances found in the blood plasma in greater or smaller quantities, and one which is all-important in pyogenic infection. To these substances Sir A. E. Wright, who with Leishman was the first to study them, gave the name of opsonins. Their exact nature and just how they influence phagocytosis, other than that they in some way prepare the bacteria for ingestion, is unknown, but that the persistence of many types of chronic purulent inflammation is due to a deficiency of these bodies there would seem no longer to be any doubt.

Speaking of Antiseptics, he says their internal administration is of no avail. Some observers, however, now believe that the curative action of quinine in malaria, and of mercury in syphilis is due to their germicidal action; if so, exception must be made in these diseases. He quotes the following from Wright: "It is axiomatic that antiseptics can take effect only on those bacteria with which they come in contact." Complete sterilization is impossible; in every case there will remain a residue of surviving bacteria and these will inevitably multiply and re-occupy the disinfected surface. Worst of all, and this should receive thoughtful consideration, the antiseptic will directly antagonize the protective forces which the living organism has at its command; it will paralyze the phagocytes and abolish the anti-bacterial power of the blood fluids. It will also injure the histologic elements and in particular the capillaries of the tissues to which it is applied.

In pyorrhea alveolaris, perhaps the most typically chronic pus infection of the human body, phagocytosis, according to McKenzie, is invariably absent, due to a deficiency of opsonins in the fluid exudate which condition not only predisposes but invites chronicity.

It would seem reasonably certain that in many cases of pyorrhea, phagocytosis is at best but an indifferent process, that the micro-organisms, meeting as they do with little or no active resistance, may be regarded as the chief obstacle to success in the treatment of this disease. Of the thirty-six cases examined by Goadby, twenty-nine had an opsonic index subnormal in varying degrees. The method of obtaining the patient's opsonic index and of raising it to normal or above by an emulsion of the dead infecting bacteria, preferably obtained from the lesion under treatment, the resulting increase in phagocytic activity and the generally good results obtained by this treatment as a complement to the usual scaling and polishing, are interestingly and concisely told in this valuable contribution to the literature on this subject.

In concluding, the writer calls attention to the fact that in the protective substances of the blood we have a most efficient instrument for the treatment of purulent inflammatory processes, needing only to be intelligently directed to that end, that in consequence of the impairment of such substances we find the chronic and progressive nature of pyorrhea alveolaris, permitting the ever-increasing and multiplying activities of the micro-organisms that are omni-present in these cases. Whatever the therapeutic measures employed, their success will be proportioned to the accuracy with which they interpret and conserve the reactive forces of nature.

A paper treating the same subject but going more into detail, appears in the March and April, 1909, numbers of *Items of Interest*. The paper is by Frederick Hecker, and is entitled, "The Bacterial Vaccines in the Treatment of Pyorrhea Alveolaris." It is prefaced by the following outline, "upon which," says the author, "I have constructed this paper:

A brief review of the evolution of bacteriology, including the early theories of fermentation and putrefaction and the study of infective diseases and diseased conditions.

The process of immunity conferred by natural and specific serums.

The opsonins of the blood; what they are.

The common organisms seen in this malady.

The technique of obtaining the organisms for growth; the methods of isolation.

The technique of making a bacterial vaccine; the standardizing of a vaccine.

The technique for making the opsonic index.

The value of the opsonic index in ascertaining the number of organisms that should be given in each vaccination.

Treatment.

The clinical evidence that is presented after vaccination.

The technique of cleaning the teeth, and the removal of the calculus.

A report of cases treated with the bacterial vaccines (according to Dr. Sir A. E. Wright's method of treatment.)"

A rather ambitious outline for a single paper but the writer has "made good" and condensed much interesting and valuable information into a few pages. His is the only reference I have seen in current dental literature, to the technique of isolating the micro-organisms and making and standardizing the vaccine. It is quite an exacting procedure, requiring special training and apparatus, which must limit its application, should it prove its efficiency, to the practice of specialists.

Hecker agrees with Goadby that while the bacterial infection of pyorrhea alveolaris is mixed, the staphylococcus, and not the streptococcus as asserted by Endleman, is the dominant offender.

The author's treatment consists of painting the gums and teeth with saturated solution of iodin; removing the visible calculus from around the necks of the teeth with dull scalers, applying lactic acid, (his own formula) to the pockets neutralizing this with sodium carbonate, after two or three minutes, after which the pockets are thoroughly washed with water and a ten per cent. solution of zinc chlorid is forced into the pockets with a fine stick. Repeat the painting with iodin, and with orange wood sticks and pumice moistened with iodin thoroughly polish every surface of the teeth. This treatment, together with ten or more vaccinations with the bacterial vaccines during a period of three or four months, has cured many aggravated cases of pyorrhea, two of which cases are cited in detail. The writer concludes thus: "There is no longer any doubt that the value of bacterial vaccines has been established and by the untiring work of the world's most able investigators."

(*To Be Continued.*)

PRESIDENT'S ADDRESS*

By Dr. J. W. Lyons, Jackson, Mich.

IT is one of the most delightful duties that it has ever been my pleasure to perform, to extend a hearty welcome to you, to this our 53rd Annual Convention of the Michigan State Dental Society, and I hope all of you may find it interesting, profitable and enjoyable to the fullest extent. May you take advantage of the opportunity to hear our many valuable papers, to witness our very instructive clinics and exhibits, and above all, to become better acquainted and to build stronger that fraternal feeling with your brother practitioners, and thus to strengthen our united efforts for bettering our profession and uplifting individual effort.

It is with a sense of great pleasure to ourselves of being permitted to gather in convention in this beautiful city, nestling here between the hills in this beautiful valley. One of the most progressive cities of our dear old State, noted for its many beautiful homes, its celebrated educational institutions, the enterprise and the intelligence of its citizens, and for being abundantly able to take care of any of our brothers who are so persistent in their research work, in attempting to either reach the depths or gain the pinnacle in their profession, as to become unbalanced in their reason.

We are highly pleased to note that the members of our profession residing in this city are of the highest rank, and are among our most progressive men. The local committee has been extravagant in the expenditure of its time, energy and finances to make this meeting a marvel of satisfaction.

It is with confidence, in speaking for every visiting member of our society here today, that I extend to the local committee the assurance of our heartfelt appreciation of the services which they have rendered and extend to them our most sincere thanks.

---

*Read before the Michigan State Dental Society at Kalamazoo, Mich., 1909.

I desire, also, at this time, the privilege of expressing to the officers and committees, and to the many loyal members of our society, my personal appreciation of their valued services in the work of the past year. Whatever we have accomplished to advance the profession and our individual interests in it, must redound to the credit of those most loyal fellows who, by their untiring efforts, have stood shoulder to shoulder in the work with me. The president of an organization of this nature can do little alone, and only through the valued assistance of those charged with responsible duties, who are faithful and untiring workers, in the administration of affairs, is he able to produce any marked results. To all members of the Executive Council, to my regular Committees, and to my special Committees, and others whom we have asked at times to assist us, I am desirous of extending from the chair of the president, for this society and for myself, the most sincere thanks for their wise and fruitful labors.

We are here assembled, not purely as a matter of pleasure, nor as a vacation period only, but for a purpose of business of combining thought and action, and the intermingling of ideas, to lend our support towards the bettering of our profession.

It is the man who is ever ready to give of his store of ideas and also just as ready to receive ideas and try them out, who is improving himself and is most beneficial to his community.

Each year sees our profession broadening out, men's minds become broader, and accepting the fact that there are others in the profession who are just as able to think and do things as they are themselves. It is too bad to relate that we also have men in our ranks who deem it lost time to attend these meetings and see and hear what other men are doing to advance our interests. They seem content to shut themselves up within their own surroundings and to dream that they are doing for their patients as much as can be done along dental lines. They sleep and are dead to the world until they are sometimes awakened by even their own patients. The public may be slow at times in grasping some of our more modern methods and ideas but the time surely comes when they demand them and it is then when they realize that there is a difference between the live ones and the dead ones. Indeed, I have but little time or sympathy for the man who chooses an occupation and expects to devote his life to its work and is satisfied to just eke out an existence because he is not ambitious enough to improve his conditions and keep abreast of the times. What an imposition he is upon a trusting public. If it were only possible for the people to see all sides in their true light and could honestly appreciate them as they really exist, then the deception practiced by many men would appear in its proper light. This can be accomplished only by the education of the dentist and the education and enlightenment of the public.

The time is upon us of looking for the very highest of ideals in professionalism.

Why do we find the cream of the dental profession closely interwoven with dental society work and dental literature? It is because, foremost, and above all else, they have at heart their life work, because they are intelligent and shrewd enough to know that while they are doing their part towards elevating their profession, they themselves are advancing by great strides and their patients are receiving a class of dental service superior to any the world has ever known. Nothing so polishes the intellect as the contact of mind with mind. As we broaden out in this age, in thought and in scientific research, it is also an accepted fact that our manipulative skill and ability increases, our genius develops, to the extent that in our clinics are found marvels of the genius' art.

A meeting consisting of only the essays and the theory, no matter to what depths the scientific research work extended, would be weak, indeed, without the clinical department which is the tangible evidence of our scientific standing, the reflection of the degree to which our progress has extended in the highest dental arts. While our aims and our interests are centered in these meetings and in developing our men to the highest point, we have also been busy extending our work in strengthening our organization so as to interest just as many of our brother dentists of the State as possible in this their own State Society. During the last year we have accomplished much in enlarging our organization. Our membership is being increased steadily and today this society stands stronger and is larger than ever in the history of this State.

Through reorganization I believe we have succeeded in getting many men interested in their profession as they never have been before; they have become interested in the work of the dental society and through their local societies have become members of the state society and are doing valuable work with us. The membership of the state society under the old system was never large and was made up mostly of those loyal fellows who could always be depended upon, who did noble and grand work for which they are to be congratulated. They have left with us a legacy of honor to the profession.

In our reorganization we are interesting a great many men in the outlying districts who have never devoted themselves to the state society and who in their district societies are doing valuable work. The district society should be a great factor for good work. The state society meeting, the net results of the development of the district societies' activities. I want to say, we are as yet far from the goal of our ambition. There is yet more than 50% of the eligible membership of the profession who are not enrolled in society work. Therefore there is much yet to be done. There is a broad field left untouched, but before I leave this subject let us see what we accomplish by organization. In the first place there has been a spirit of professional unity which never has existed so strongly as today. The petty selfishness which was so common is the profession is disappearing and you find your neighbor ever ready to lend you an idea or assistance upon the asking and not so ready to pick up your faults and magnify them out of all proportion. We begin to realize that we stand as one body for the uplifting of our profession.

If there is anything to be lamented it is this selfish spirit which long existed in the dental profession. A unity of purpose shows that we are standing on the same level, that our interests are one.

This reorganization in our state is putting us into one big body, where, when our organization is complete, we can put our hand on the lever and ask our members to support things in the interests of the profession.

Don't misunderstand me—in speaking of the interests of the profession in the broad term I am also meaning the interests of the community, for whatever interests the dentist, interests the community as well and therefore the bills that come before our legislature regulating dental affairs are as strictly beneficial to the community as they are to the dentist himself. While there is an impression among the laity that our legislation is all, especially to advance our own individual and particular interests, I am glad to say that by education they are finding out that we have a broader sphere of work than simply the spirit of selfishness in building up our own particular craft.

Let me impress upon you that it is our district societies to which the individual dentist owes his first allegiance. If the district organizations are supported and built up into what they are possible of becoming, there will be no fears for the prosperity of the state society.

The state organization as conceived by the men who have given it their most sincere thought is, as I have said, but the aggregation of the district societies' activities.

It is but the results of the work accomplished in the local societies. The influence of the state society may be strong, but meeting as it does but once a year it does not compare to the influence exerted through the district organization which may be meeting as often as monthly, with their full quota, or nearly so, of members present..

The state society is, then, but the great bond that binds these district societies together. Bringing together the results of our research, to compare notes, as it were, to disseminate the dental knowledge gained, to enlighten and direct public opinion regarding dental problems, that the profession shall become more capable and honorable to itself and more useful to the public.

While quackery exists and always will exist in the various sections of our commonwealth, yet there is a restraint placed upon it.

Michigan has a much better dental law at this time than it had a few years ago, but it lacks much yet, when the appointments to our most important board are entirely within the realm of political patronage. When the chief executive of the state makes an appointment to such board and in so doing absolutely ignores the state society, I believe it is about time for us to stand as a unit in our great organization and resent such action and to exert our individual influence to bring about a change in this matter, that will eliminate this very objectionable feature, which will work great detriment to the elevation of the profession of Michigan.

We find it very difficult indeed to get men to doing things, to get them to realize that little simple methods and ideas they are pursuing from day to day, and which in their hands are so successful, are unknown to their brother practitioner. They seem to think in giving a clinic it must be something extraordinary, or else their efforts are of no avail. Many times clinics of the simplest nature are the most interesting.

Are we each of us doing all we can to place our profession on a basis with law and medicine? The public in the past has not regarded us in our true position. Many become so wrapped up in their work, their whole heart and soul in it to the extent that they think of nothing else and consequently become narrow in a degree in occupying their place among the citizens of their community. I believe we should be broader men in the affairs of the day of which we are a part in this great world.

We can only command the public to the extent to which they know us. We can not expect our profession to be more elevated nor broader than the men of which it is composed. We can not hope to hold a more dignified position among other professional men than that in which we regard ourselves. It is every dentists' duty to be interested in the social, political and civic affairs of his community and thus broaden his views beyond that of simply professional obligations.

It is of great moment in the dental affairs of Michigan, the grand work inaugurated by our brother dentists in the city of Detroit, in their establishment of the free dental clinic and carrying it to a successful issue. With such work being instituted and demonstrating the great needs for the same in our large cities it will not be long until we can compel the co-operation of the health authorities and physicians in getting enacted laws which will give us the dental inspection and the compulsory care of the oral cavity of all school children in our public schools, also in the State institutions, which, be it to the shame of this great state, dental care, except extracting, in those state institutions which care for children, is a thing unknown. For example, I might mention the industrial school for girls at Adrian. A child may be placed in the school at an early age and is well cared for mentally, but physically, as far as the teeth have to do with the health of the body, it is debauched. So much for the inconsistency of the State affairs. The law provides for the extraction of those teeth which decay and cause pain, but not for the simplest kind of filling.

A child is taken into the school at an early age and turned out from there as a young lady with teeth missing in all locations in the dental arches.

This is but tyranny in a degree. Unlike the penal institution, there is no way provided by which the inmates might earn a little by which they could take care of their own teeth in a simple way to preserve them. When they decay, as they inevitably will, and reach the stage of pain, they are forcibly removed to the dentist and the offending member extracted. Do you question the need of dental education? Would it be out of place in the dignified chamber of the senate, in the House of Representatives, or in our great executive office?

During the present year much has been done for dentistry in Michigan by the completion and dedication of the new dental building in our State University at Ann Arbor. Never in the history of dentistry in this state has Michigan been given such an opportunity to place itself in the foremost ranks of the profession as it has now. With this new equipment our young men have such an opportunity as never before to delve deeper into the science, to promote original research, and to come forth better prepared to establish reputations for themselves.

It lies to a great extent with the man and how well he prepares himself as to how exalted a position he assumes.

American dentists are acknowledged to be the peer of them all and we should be able to make the best American dentists in Michigan.

This association which established this school and looked carefully after it in its infancy should again take such an interest in it as to see it the greatest school in America.

It is our school. We, each of us contribute our proportion to its financial support and we as dentists of Michigan are very greatly to blame if it does not succeed. We cannot afford to stand idly by and unconcerned as to its welfare. No matter whether we are all graduates from it or not, it is our school just the same and are we not patriotic enough to stand by our State, our university, and the one department of all others in that university in which we are most vitally interested? We, the greatest body of dentists of Michigan, should demand of this school the highest grade of instruction obtainable in this country, in each branch of dentistry. We should stand as a unit in exerting our influence with the controlling board of regents and with the faculty to bring forth results eminently satisfactory to our critical minds. A matter of great importance taken up and carried through this year by the society is the presentation of a subscription to the DENTAL SUMMARY to each of its members, thus providing every member with at least one dental journal. We are to be congratulated upon securing the SUMMARY, which by its enlarged and remodeled condition has placed it *in the class of the best journals of the country.*

A matter for the society to look after in its very near future besides having an official organ to present to its members, is to see that the proceedings of these meetings are published in pamphlet form and also furnished its members for the reason that many valuable papers and the description of the many clinics would be most valuable in the hands of the members as soon after they are given as possible. Dentistry is advancing so rapidly that a paper read today and published from nine months to a year from now has lost much of its value for the reason that much of it becomes obsolete and out of date. Our journals would be of greater value to us if every article they published was up to the minute.

With a heart full of love and gratitude I now take leave of you. I most devoutly wish that your latter days may be as prosperous and happy as your former ones have been glorious and honorable.

A STUDY OF MALNUTRITION IN THE SCHOOL CHILD *

By E. Mather Sill, M. D., New York, N. Y.

THIS study was undertaken with a view to determine as far as possible the etiologic factors, which to a large extent are at the bottom of this very prevalent condition found in our city children, especially of the school age.

CAUSES OF MALNUTRITION

The subjects were all taken from the laboring and tenement-house classes and the parents were mostly foreigners. Each little patient, after having a careful physical examination, was weighed, a full history obtained from the mother through a trained nurse who spoke her language, and anything such as tuberculosis, syphilis or other diseases that would have a bearing on the condition of the child carefully noted. Then the following questions were asked the mother: "What does the child get for breakfast, for dinner, for supper? How many rooms have you? How many in the family, including boarders? Do you keep your windows open at night to allow the circulation of fresh air, and air the house in the daytime? When does the child go to bed? Does the child eat between meals—candy, etc.? How often does the child get a tub bath? Is the child in a grade with children of its own age at school?

The answers to all these questions were tabulated opposite the name of each child with its history, weight and age. In 210 malnutrition cases in my own clinic on the lower East Side, it was found that meals were given as shown in Table 1.

TABLE 1.—DIET IN 210 MALNUTRITION CASES

Breakfast.		Dinner.		Supper.	
Tea or coffee and bread	165	Tea or coffee and bread	28	Meat-soup	136
Cocoa or milk and bread	30	Meat-soup and potatoes	116	Coffee or tea and bread or cake	45
Milk or tea and egg	10	Coffee, egg and bread	29	Bread and milk	15
Coffee and oatmeal	4	Bread and onion	2	Bread, milk and soup	4
Nothing	1	Fish or egg or bread	6	Bread, milk and fish	2
		Rice and milk	2	Milk and egg	3
		Egg and milk	5	Coffee and egg	4
		Cocoa and bread	4	Nothing	1
		Cocoa-egg	1		
		Bread and milk	10		
		Egg and bread	6		
		Nothing	1		

The table shows that 175 drank tea or coffee at least once a day and many (25 per cent.) had tea or coffee two or three times a day. We find cereals given only six times. In other words, 83 per cent., of these children practically depended for their diet on tea or coffee and bread.

Of the 210 families examined, 3 had 1 room, 34 had 2 rooms, 114 had 3 rooms, 52 had 4 rooms, 3 had 5 rooms, 1 had 6 rooms. This makes the

---

*Read in the Section on Stomatology of the American Medical Association, June, 1909. Published in THE DENTAL SUMMARY by special arrangement with the *Journal American Medical Association.*

average number of rooms per family 3. The size of these three rooms averages 3,600 cubic feet. Seven families had 3 members each, 34 had 4 in the family, 49 had 5 in the family, 48 had 6 in the family, 22 had 7 in the family, 15 had 8 in the family, 12 had 9 in the family, 10 had 10 in the family, 4 had 11 in the family. The average size of the family was 6. This allows only 600 cubic feet of air space for each person.

Sixty-two per cent. kept their windows closed. Fifty per cent. of the children ate between meals—candy, etc.; 13 per cent. were in a grade at school with younger children. Of these children, 21 per cent. went to bed at 8 o'clock, 40 per cent. went to bed at 9, 24 per cent. went to bed at 10, and 12 per cent. went to bed at 11. These children were all under ten years of age and should have been in bed at 7 o'clock.

We found that 18.5 per cent. had a bath once a week; 22 per cent. had a bath once in two weeks; 11 per cent. had a bath once in three weeks, 18.5 per cent. had a bath once in four weeks, 22 per cent. had a bath once in three months, 4 per cent. had a bath once in two months, and 4 per cent. had a bath once a year.

We found that all these malnutrition patients were decidedly under weight for their age compared with the weight of normal children, the discrepancy varying from 4 to 16 pounds. Many children were found to be of the same weight as normal children who were from one to three years younger, and in extreme cases there was even a difference of four years, and the cases were not picked but all malnutrition cases just as they came.

The ages of these children were from three to ten years, but the great majority (175) were from six to ten years (or the school age). One thousand other children in the primary schools, in the Jewish quarter on the East Side were examined by me. Of these 40 per cent. were found to be poorly nourished, under weight and more or less anemic. These were, therefore, malnutrition cases. These children were from six to twelve years of age. Eighty-six per cent. had dental caries, 90 per cent. had adenoids, 40 per cent. had hypertrophied tonsils, 6.5 per cent. had defective hearing, 10 per cent. had defective vision, 4.5 per cent. had tuberculous lymph nodes of the neck, 1 per cent. had pulmonary disease, 0.4 per cent. had cardiac disease, 0.8 per cent. had chorea.

It will be seen that a very high percentage of these children had dental caries, and I believe we should put down this as one of the causative factors in malnutrition, since bad teeth mean improperly masticated food and disordered digestion, and painful teeth cause anorexia.

Whether the very high percentage (90 per cent.) of adenoids is due to the climate of New York City or the poor ventilation is a subject open to discussion and will require further investigation; but probably both causes are in a measure responsible.

Of the 210 patients examined in my own clinic 75 per cent. had enlarged cervical glands. One hundred and one of these children were tested for tuberculosis either with the Moro ointment test or the von Pirquet cutaneous test and some with both and 55 (55 per cent.) gave a positive reaction. Thirteen per cent. gave a family history of tuberculosis.

Practically all these children had defects and complications other than the malnutrition, the variety and percentage of which was very much the same as those found in the children examined in the schools. A detailed list of these defects would necessitate too long a paper.

It was observed that many of these children were in such a condition that they had no desire for good nourishing food and, indeed, could not retain it, because their stomachs had become so accustomed to the tea and bread or coffee and bread diet. The mother would say when told what food the child required, "But, doctor, she will not take it." Van Noorden accounts for this condition by stating that the activity of the digestive organs during starvation is lowered and the secretion of saliva, gastric juice, bile, and intestinal secretions diminish. In many of these cases the stomach had to be gradually educated to a stronger diet and the children were treated just as one would treat convalescents from disease.

It has been found that tea diminishes all the secretions of the alimentary tract and thus we see another reason for this inability on the part of the stomach to take food. Thus many causes play their part in bringing about malnutrition in the child, but two causes stand out prominently and common to all, namely, insufficient and improper nourishment, and bad housing. As Kerley has aptly put it, the child does not get what it has a right to demand.

Poverty, I am forced to admit, is an important factor in the causation of this chronic starvation or ill-nourished condition, but ignorance on the part of parents plays even a more important part—ignorance as to food-values, ignorance as to cooking, ignorance as to how to live, ignorance as to cleanliness, fresh air and sunlight. Although very few mothers had a proper idea of what foods were nourishing, or how to cook foods properly to make them nourishing, all were willing and glad to be instructed, and it seems to me that just here lies in a measure the partial solution of this problem. Since the mother who loves her child is by far the best instrument the state can employ to see that that child is properly nourished, fed and cared for, and in providing for its real education, the mothers are better than teachers, school managers, medical inspectors or attendance officers. It is economy to educate and improve the mothers and in that way guide the natural love to be an effective help in bringing up children to be healthy and useful citizens.

Visitation of the homes of underfed children and instruction of mothers would wonderfully reduce the number of these underfed children. The employment of the mother is responsible for many neglected children; given a father out of work or sick, and the mother must take in sewing or go out to work, with too often the result of underfeeding of not only the children, but herself as well.

A few statistics quoted from other writers may give a more adequate idea of the vast numbers of children involved and the importance of the subject.

Robert Hunter says: "Few of us sufficiently realize the powerful effect on life of adequate nutritious food. Few of us ever think of how much it is responsible for our physical and mental advancement or what a force it has been in forwarding our civilized life." Again, Hunter says that 60,000 to 70,000 children in New York City, "arrive at school hungry and unfitted to do well the work required of them. And at least 3,300,000 under fourteen years of age are underfed in the United States."

My own figures show an apparently greater number of underfed or more correctly speaking ill nourished children in New York City, and fewer in the United States.

The latest available figures show that there are 241,947 school children in the elementary schools (primary and kindergarten) of Manhattan, and 555,525 elementary school children in Greater New York City. My statistics show that of this number there are approximately 96,778 in Manhattan and 222,210 in Greater New York City that are ill-nourished.

The census of 1900 shows that the urban population is increasing much more rapidly than the rural population of the United States. The increase in the total population in the United States from 1890 to 1900 was 20.8 per cent., while the increase in the urban population during that time was 36.8 per cent. This shows that we are becoming more and more a people dwelling in cities. We find the urban population in the United States in 1900 was 28,411,698.

Of the total population, 19.82 per cent. of pupils were enrolled, (or we might say now practically 20 per cent.). This would give us 3,682,239 school children in the cities in the United States. It is in the cities where we see the overcrowding and bad feeling mostly, and therefore most of the ill-nourished school children.

My statistics would show, then, that there are approximately 1,472,895 ill-nourished school children in the cities of the United States.

In the report of the Interdepartmental Committee on Physical Deterioration, Dr. Echholz, a British school inspector, states that on examining children in the Johanna Street Board school, in Lambeth, a type of school in a very bad district, 90 per cent. are found unable by reason of their physical condition, to attend to their work in a proper way, while 33 per cent. during six months of the year, require feeding. He estimates the number of underfed children in London as approximately 122,000.

Dr. Mackenzie considers more than one-third of the children in Edinburgh ill-nourished. These percentages from the cities in Great Britain correspond closely with my own in the cities of the United States.

John Spargo, in his excellent work, "The Bitter Cry of the Children," says that a crude investigation in the public schools of New York found out of 12,800 children, 2,950, or more than 23 per cent., wholly breakfastless or provided with miserably poor breakfasts.

A more careful and systematic investigation was made by Dr. H. M. Lechstrecker, of the New York State Board of Charities. He examined 10,707 children in industrial schools of New York. Of these, 998 had coffee or coffee and bread only for breakfast; 439 or 4.10 per cent. had no breakfast; 998 or 9.32 per cent. were anemic, owing to lack of nourishment. Only 1,855 or 17.32 per cent. started the day with an adequate meal. These astounding figures should indeed thrill every true American with the importance of the subject and the duty each of us owes to humanity for the relief of this curse which is sapping the life of our coming generation and threatens the health and strength of our nation. It is our duty to give this vital and far-reaching question our most careful thought and study, and to try to evolve means whereby this state of affairs among our poor can be properly, scientifically and adequately dealt with, as it involves the lives of our future American citizens.

Is it not absurd to force these little half-starved things to attend school as our compulsory school laws do force them? Is it fair to suppose that a hungry child, wasted and weakened, with the attendant conditions of lassitude, irritability, nervousness and anemia, the result of prolonged underfeeding and bad housing, can study in school for five hours with scarcely any intermission?

Although great advancement in the science of education has been made in the past twenty-five years, the physical condition and development of the child has been grossly neglected. When the child has a poorly developed and weakened body little can be expected from it in the way of mental development or advancement. The duty of the nation is, first of all, to care for the proper feeding and housing of its children and so to insure their proper growth, development and health.

A. F. Tredgold informs us in his book on "Mental Deficiency" that insufficiency and improper feeding, absence of fresh air or warmth, and the general neglect which unfortunately prevails during the early life of many of the children in our densely populated industrial centers, produces a retardation of the mental growth which is not permanent and is not therefore dementia. "Under more congenial surroundings the brain rapidly recovers and the child soon regains the normal standard."

Thus, no doubt the so-called stupidity or backwardness of many children in the public schools is simply the result of neglect and underfeeding.

Dr. Collie, Medical Inspector for the London School Boards, says that mental disability is not only preventable but in many cases curable. The brains of these underfed children are starved and fail to react to the ordinary methods of teaching.

Van Noorden, from experiments on man and animals has deduced the following law: "The expenditure of energy during starvation diminishes in the same proportions as the weight of the body, apart from extreme degrees of emaciation or adiposity and with moderate bodily exercise by day and normal hours of sleep by night.'' The operation of this law of Van Noorden, then, would account for the lassitude, nervousness and loss of energy seen in these children.

Atwater's experiments show that a larger amount of protein is required with physical labor than with mental labor and more energy utilized; therefore, the importance and necessity of a high proteid diet in the active child—and every healthy child is active. It has been shown by Atwater that a man on a vacation requires 79 grams of protein per day for a diet of maintenance which produces 3,125 calories of energy. It is known that three-quarters of the amount of proteid necessary for an adult is necessary for a child. A growing child would therefore require about 59 grams per day, which would produce about 2,330 calories of energy. This proteid should be given largely in the form of a vegetable proteid. Children, by reason of their rapid digestion, and great respiratory activity, should have about as much carbohydrate as adults.

Atwater also states that a child under two years requires 0.3 the amount of food of a man doing ordinary work; from six to nine years, 0.5; from ten to thirteen years, 0.6; a girl from fourteen to sixteen years, 0.7; a boy from fourteen to sixteen years, 0.8.

The growing child, requiring a highly nutritious diet, requires also a great deal of fresh air to oxygenate the food properly. This requisite is impossible, as we shall presently see, with the housing conditions as they are. The conditions of overcrowding in New York (and in fact in all our great American cities), has become a most menacing one.

The census of 1900 showed that more than 2,000,000 in Greater New York lived in tenement houses. These tenements then contained, according to Ernest Pool of the University Settlement, 361,000 interior living-rooms without light or ventilation. The number of these insanitary and disease-breeding rooms has since been reduced by 31,000 through the efforts of earnest men and women, leaving still the great total of 330,000 of these death-traps.

When actual figures show that six people on an average are crowded together in three small rooms, two of which are often inside rooms, the sum total of the air space in these rooms averaging about 3,600 cubic feet (which is only half the air space that six people should have), is it any wonder that so many are in such a pitiful condition of health and that the contagious diseases and tuberculosis are so prevalent in this quarter?

Charles Edward Russell writes that in the most crowded regions on the East Side of New York the increase of population from 1900 to 1905 was about 33 per cent., while the increase in the whole borough was only 14 per cent.

There are 51 blocks in New York that shelter nearly 200,000 persons and the congested lower East Side contains about 600,000 people. Its area is only 0.5 per cent. of the total area of the city. What kind of children can we expect from people living under such conditions? And it is from this quarter that a large proportion of school children are drawn.

These same insanitary and overcrowded conditions have existed in London's East Side (Stepney) for the past thirty or more years and we only need to read some of the recent articles on the subject to realize the gravity and horror of it all, and the appalling results to the people. Shall we not take warning from these conditions?

If one compares the tenements of Berlin with those of New York, one is at once impressed with the foresight of the German people in providing these beautiful, light, sanitary and airy tenement-houses with wide balconies and courtyards and playgrounds for the children. Germany knows that the strength of the nation depends on the health of the working masses.

As it has been shown (at our last International Congress on Tuberculosis) that tuberculosis costs the nation each year millions of dollars and as this dread disease follows closely in the wake of bad housing and bad feeding, it does not take much calculating to see that to prevent these evils, even at a great cost, would really be money saved to the American people.

This, then, is the state of our great American cities and in case of war, our soldiers must needs be drawn from among these poor anemic underfed weaklings. What is the use of battleships if we have no men to man them? Is it a wise thing for the American people to sit still and say nothing when laws should be passed compelling the building of sanitary habitations with plenty of room to breathe and plenty of sunlight? What does all this investigation show? To my mind it shows that the present way the poor are fed and housed in the large cities is responsible for much suffering, many lives lost, much sickness, degeneration, demoralization and the blighting of thousands of lives.

I believe that the present condition of affairs in the congested parts of our great cities could be entirely changed and controlled by laws. This can never be accomplished by private charity but must be dealt with and provided for by the state and national legislature; since laws governing these things are necessary for the public safety, health and welfare.

There is no reason why New York and other great cities should not have just as good tenements as Berlin. We are too busy in the games of graft and grab. It is simply our short-sightedness, greed and haste to get rich that has allowed us to build and retain the present style of insanitary tenements. Let us reform before it is too late.

(*To Be Continued.*)

REPORT OF THE PROPOSED DENTAL EDUCATIONAL AND HYGIENIC WORK IN THE CLEVELAND PUBLIC SCHOOLS

By W. G. Ebersole, M. D., D. D. S., Chairman
Committee on Oral Hygiene, National Dental Association

(*Concluded from Page* 149 *Feb'y Summary.*)

The committee of twenty-two asked the committee of three to present their plans and an estimate cost in time and money, which was as follows:

Gentlemen—The Committee on Education and Oral Hygiene, in compliance with your request, wish to submit the following report:

Total amount of work to be undertaken:

1st. Examination of 56,000 pupils.

2nd. The maintaining of four clinics for five half days each, per week, for thirty weeks.

3rd. The establishment of lecture courses and a systematic campaign of Dental Education.

In carrying out this work it is understood by the committee that all equipment for this work will be furnished by other organizations, namely the National Dental Association and the Ohio State Dental Society, the Cleveland Dental Society being called upon to simply furnish the men and assistants to do the work, therefore, this report deals with that side of the proposition.

The Committee finds that the 56,000 pupils of the schools (exclusive of High schools) can be examined by a dentist and lady assistant, at the rate of about thirty per hour, thus requiring 1866 hours or 622 half days of three hours each, or 311 days of six hours each, or one day less than 52 weeks, or one year to make the entire examination.

In figuring relative to the clinical work, the Committee has based its calculations on operating the four clinics for five half days each per week for the school year of thirty weeks. This would require twenty half days per week for each of the thirty weeks to man the four clinics, or six hundred half days or three hundred days, or fifty weeks of six days each.

The character of the lecture courses and the educational campaign is such that only a rough estimate of the time required to man it can be made. The most of this work falling outside of the regular hours of both the dentists and the schools, the committee thinks that it should not be included in the general estimate, for it believes that it can secure men to do the work in addition to and aside from the general proposition.

It has, however, been estimated by our committee that about 25 days' time would be required in this direction, or one day over four weeks of six days each.

Therefore, if it will take one dentist and an assistant 311 days or 52 weeks to examine the 56,000 pupils, and the clinic work, as laid out by the committee, requires 300 days or 50 weeks, we have 311 days or 52 weeks' examination work plus 300 days, or 50 weeks' clinic work or 611 days, or 102 weeks' work in all, exclusive of the lecture and educational work.

This, gentlemen, would simply require the giving of one week's time by each of the present membership of the City Society, which is 102 men, but if to this we add four weeks allotted to the lecture course and educational work then it would require 106 men, giving one week each to do the whole work.

This means, gentlemen, that each member of the City Society would only be required to give one fifty second part of his entire time for one year to guarantee the successful execution of one of the noblest, worthiest and broadest projects ever undertaken by the dental profession, either from the altruistic or economic standpoint. This simply means that each member of the society would have to give twelve half days of from 8:30 to 11:30 a. m., distribution throughout the thirty weeks of the school year, or pay towards the cause an amount which would enable the committee to procure competent service to do the work properly.

The committee would, therefore, recommend that the members of the entire society pledge themselves to give either one week of their time to this work, or an equivalent which will enable the committee to complete the work.

In complying with your request, the committee has ascertained that the price at which competent services can be procured for the clinic work will be at the rate of $5.00 per day. The dental service for the examination work can also be secured for $5.00 per day, but to this must be added the cost of a lady assistant at a cost of $1.00 per day, making that work cost at the rate of $6.00 per day, but inasmuch as fifty per cent of the work is devoted to each, the examination and the clinic, it would, therefore, require each member who did not give his time and assistant, to pay at the rate of $5.50 per day.

The cash equivalent to run the work:

Examination	$1866.00
Clinic	1500.00
Lecture and Educational	125.00
Grand Total	$3481.00

or an amount $1.00 in excess of the amount that would be obtained from 116 men paying an equivalent of $5.00 per day for one week of six days per week or $3480.

Respectfully submitted,

Signed,
J. R. Owens,
W. A. Price,
W. G. Ebersole,
Chairman.

This report received the unanimous endorsement of the committee of 22 members, recommending it to the society for adoption.

Following the recommendations of the above report to the society by the committee of 22, the following agreement was passed and signed by 21 members of the 22:

We, the undersigned, agree to pledge to the work outlined by the Committee on Dental Education and Oral Hygiene, of the Cleveland Dental Society, for the School Children of Cleveland, at least one week of service, or Thirty-three ($33.00) Dollars.

The committee then decided to divide itself into three sub-committees for the purpose of outlining methods of doing the work.

The committee was divided as follows:

Examination	Clinics	Educational and Lectures.
J. R. Owens	Weston A. Price	W. G. Ebersole
J. F. Stephan	Frank Acker	Henry Barnes
H. R. C. Wilson	Geo. H. Wilson	Ira W. Brown
M. D. Neff	W. B. Bissell	W. T. Jackman
E. L. Pettibone	T. B. Johnson	W. A. Siddall
J. T. Newton	S. M. Weaver	W. H. Whitslar
J. W. Culver	W. S. Sykes	D. H. Ziegler
Chas. K. Teter		

The following is the report of these sub-committees as corrected and recommended by the large committee:

EXAMINATIONS

Your sub committee appointed to prepare and submit plans for conducting the examinations of the pupils in the elementary public schools of Cleveland respectfully submit the following report:

There are eighty elementary school buildings with their annexes, containing 54,662 pupils in the city of Cleveland.

We estimated that an examiner with his assistant will be able to examine the mouths of thirty pupils per hour. At that rate it will require 607 half days of three hours each for one examiner to attend to all the pupils. Or fifty men, giving twelve half days each, to accomplish the same.

We recommend that the principle of appointing one man for each school be carried out as far as practicable. This would call for eighty examiners. The list of men selected for this work by the Society to be submitted to the Director of Public Schools, who will, with the assistance of the Supervisors of Dental Examinations of this society, assign with a certificate the candidates to their respective schools. The certificate being countersigned by the Director of Dental Examinations. The certificate blank practically that of Exhibit A. The examiner will report to the principal of the school and work in harmony with his or her direction. The examiner will make monthly reports of examinations made to the supervisor of examinations, and must complete his work by June 1, 1910. The examiner must be prompt in attendance and devote his entire time during the morning session. He must send the examination blanks to the school and instruct the principal to have the name, age, grade, school and nationality filled in by the pupil or teacher of the respective room at least two days before he expects to conduct the examination. The examination blank we suggest be similar to Exhibit B. The blanks to be filled in triplicate, one given to the teacher of the pupil, who will be held responsible for its getting to the parent or guardian of the child. The second given to the Director of Public Schools and the third retained by the Cleveland Dental Society.

The teacher will be furnished with blanks like Exhibit C, to be sent to parents upon request, who are unable to pay for dental services and are known by the teacher to be proper persons for free service. (This will require careful and judicious treatment to prevent the lowering of self-respect and self-responsibility.) This blank applying for free service may be filled by the parent or guardian and returned to the teacher who must endorse it and return to pupil with instructions how and when he may receive service at the clinic. (It might prove wise for the teacher to make an appointment by 'phone with the dentist in charge of clinic for the pupils. This is a matter of detail.)

Each examiner must provide or be provided with a woman assistant and necessary preparations for antisepsis. He will fill out the blanks in triplicate and sign them.

Signed.

J. R. Owens, Chairman.
J. F. Stephan,
Harris R. C. Wilson,
Milton D. Neff,
J. T. Newton,
E. L. Pettibone.

EXHIBIT A

Board of Education, Cleveland, O., 1910.

This is to certify that............................has been appointed Dental Examiner of..................................school for the year ending June, 1910.

....

Director of Public Schools.

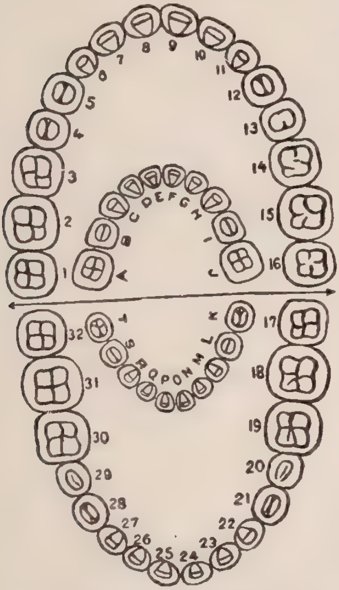
Approved by the Cleveland Dental Society.

....

Director of Dental Examinations.

EXHIBIT B

Dental examination of Cleveland school children made under the direction of the Board of Education by the Cleveland Dental Society.



Name ....

Age ....Grade............................

School ....

Condition of the Gums........G........B........

Use tooth brush, Yes......No......

Teeth filled, Yes......No......

Malocclusion, Yes......No......

Urgent attention, Yes......No......

Nationality ....

This examination is not exhaustive.

Examined by..........................D. D. S.

Marking on cut represents teeth needing attention.

The care of the teeth by brushing after each meal and careful examination by a dentist at least twice a year and all necessary repairs attended to before the teeth are badly decayed, is necessary to health and comfort.

The child whose parent or guardian cannot pay for the necessary dental services may receive attention of the Free Clinic provided for this purpose, upon the presentation of a blank furnished by the teacher and filled out by the parent or guardian.

EXHIBIT C

To the Director of Public Schools.

I hereby request that my child, or ward, name................................ be given the service of the Dental Clinic. I am unable to pay for the necessary service.

Signed ....

Residence ....

The above pupil is a proper patient for the Dental Clinic.

Signed...........................Teacher.

Date .... School.......................................

COMMITTEE ON CLINICS

Your sub-committee on Clinic reports as follows:

No. 1. It is recommended that there be a fixed time for clinics as to hours and days of the week from Monday to Friday, inclusive.

(Large committee suggested that hours of the day be left to be adjusted to school conditions.)

No. 2. Recommended that clinicians be hired for extended periods rather than that these services be rendered by many different operators, for reasons apparent: The influence on child and consistent method of operation.

No. 3. Recommended that eligibility of clinicians be such as to make them eligible to membership in Cleveland Dental Society and preference be that members of the society be engaged if possible.

No. 4. That a system of records corresponding and related to the examination blanks be used, also a special blank that will follow up the school work of the child after treatment to note effect of services on general efficiency.

No. 5. Recommended that supervision of clinicians be by as few men as possible, by one if finances will permit, and that work be done as uniform as possible in method.

No. 6. That service be of carefully inserted and finished plastic fillings, pulp and root treatments, prophylactic measures and instruction, etc., that is the best that can be done for the child without installing as much expense as gold fillings.

No. 7. That a brush and tooth powder and antiseptic wash be furnished each clinic patient gratis, the formulæ to be that of the profession under the society name and not proprietary.

Members of Clinic Committee

Weston A. Price,	T. B. Johnson,
Frank Acker,	S. M. Weaver,
George H. Wilson,	W. S. Sykes.
W. D. Bissell,	

The sub-committee on lectures and education begs leave to submit the following report:

Your committee believes that a lecture course should consist of four lectures under the following heads:

1st. Anatomy and Development of the Teeth.
The Physiology or Function of the Teeth and Oral Cavity.
2nd. The care of the Teeth and Oral Cavity from a Prophylaxis standpoint.
3rd. The Care and Treatment of Diseased Teeth and Oral Conditions.
4th. The Effect Produced by the Loss of Teeth and Other Faulty Oral Conditions.

The committee would recommend that 5 corps of 4 men each be selected to prepare lectures or talks on these various subjects, and when they have written or prepared their talks that the men assigned to each subject be brought together and that the salient points be taken from each paper and combined, making a uniform lecture to be given by the four different men.

The committee would also recommend that the different corps of speakers be assigned one to each of the five nights of the school week, and that lectures be arranged for each school in the city, one lecture to be given each evening until the entire public school system be covered.

It is the recommendation that arrangements be made to illustrate all of these lectures and talks by the use of the stereopticon and such other paraphernalia as will illustrate the point the speaker desires to make. This includes such recommendations as retorts containing substances used in representing the effects of mastication on digestion, models and illustrations showing the result of faulty occlusion and loss of teeth.

This subject is of such a broad nature that the committee feels its inability, at the present time, to present any definite matter in this direction, much depending on the men who are selected to take up the work.

Respectfully submitted,

W. G. Ebersole,	W. A. Siddall,
W. T. Jackman,	D. H. Ziegler,
Henry Barnes,	W. H. Whitslar.
Ira W. Brown,	

Following the above, the committee of three decided that the lecturers should be chosen by the society as follows:

The committee to nominate say twice the number of men necessary to do this work and then have the society elect its representatives from this number, with the understanding that these men shall follow the will and wish of both the society and Board of Education.

Your committee on Education and Oral Hygiene would therefore recommend to the Cleveland Dental Society that,

1st. The plans and methods of securing the time or money to do the work in the schools, recommended by committee and endorsed by the sub-committee of 22 men, be adopted by the society.

2nd. That the recommendation of the sub-committee relative to the details of doing the work be taken up, discussed and corrected that they may be made to harmonize with the views of the members of the Society as far as possible, but that it be especially and expressly understood that enough leeway must be given those who are to put them into execution, that the best results may be obtained and the work done in the most satisfactory and approved manner.

Respectfully,

Signed.

W. G. Ebersole, *Chairman.*
J. R. Owens,
W. A. Price.

Dr. J. R. Owens then read a paper prepared at the request of the committee of twenty-two which is as follows:

Address introducing the Proposition of the Committee of Dental Education and Oral Hygiene, of the Cleveland Dental Society, to start an examination, clinic and lecturing in the public schools of Cleveland, by J. R. Owens, D. D. S.

Mr. President and Gentlemen of the Cleveland Dental Society:

There is a world wide awakening of the people to the shortcomings of our economy of the political, industrial, social and moral world, and a re-adjustment is going on along the whole line, the old order giving way to the new. Knowledge is power. In the old order knowledge was possessed by the few. They used it to exploit the many. Democracy has extended learning so the many and those who are in sympathy with the many are possessed with the power to help mankind. This spirit of helpfulness is growing rapidly. It is antagonized by ignorance and cupidity, but it is bound to succeed, and as it does it will prove a blessing not only for those who are of the vast army of the helpful, but to those who ignorantly oppose it. Tonight we are interested in the social and moral movement of this restless advancement. We believe that a sound body produces a sound mind, and sound mind sound morals.

The human body is the most intricate machine in the planet. All the mechanical appliances are used in its construction. In it is the most perfect water, heating, cooling and sewerage system. The telegraph, telephone and phonograph, color photography, optical apparatus and most wonderful library for the storing of knowledge, as well as central station for the telegraph, telephone and phonograph. This machine is so perfect that the operator in taking possession of it, knowing but little of its construction except as to touching the various buttons and pulling certain levers to make it go, by long using he becomes more expert, but after that experience comes too late when the machine is broken or worn out in spots and beyond repair. The operator who is familiar with every throb of the machinery and knows where the friction exists, or the pipes clogged, or wires disturbed and can fix them, has a great advantage over the ignoramus who knows only the buttons and levers. He can enjoy to the limit the heights and depths of living, because he can keep the machine in order and get the most out of it. We are interested in becoming good engineers of this wonderful machine, and have a desire to help others to understand its working and management.

We are specialists and are directly interested in one of its hoppers and the mill for preparing the fuel and other supplies. We think we know something more on this subject than the other engineers, so we desire to give that knowledge to help the fraternity along.

There is a sentiment of the old condition of things, "Every one for himself, and the devil take the hindmost," and another, "It is not right for the thrifty to take care of the thriftless." They do not believe in giving a lift to the one that is down, but in the survival of the fittest, and the fittest they think to be the ones who through hook or crook get on in the world. But we believe in the brotherhood of men and we believe that it pays to lend a hand to those who are down. How many notable examples of those who were helped who could not help themselves, who have blessed the world with their lives of usefulness and genius.

The matter of expense for instituting examinations, clinics and lectures for the care of the teeth and instruction regarding the cleansing of the mouth and teeth will be the means of saving more money than it would cost many times over. First, in lessening the number of absentees from school, better ability to concentrate the thoughts of pupils who were before annoyed and sometimes frantic with toothache so their standing would be higher and would pass examinations where now they are dropped or have to repeat the year's study. It is estimated that the schools of this country spend twenty per cent. of the school fund for teaching, to repeat the lessons to the pupils who do not pass their examinations. It is estimated that seventy-five per cent. of the absentees from school is due to sickness. Of this I do not question but that half of those ill have trouble with their teeth.

Of various examinations held in this country and across the water, the percentage of children needing dental and oral attention is all the way from eighty to ninety-nine per cent. An alarming number of these have mouths that are handicapping the child for normal thought and work, and I am sure the reduction of such conditions would amply compensate and more than save the money expended for their amelioration.

We are not pioneers of this work. Russia started it in 1879. Eighty per cent. of the inhabitants of St. Petersburg were found to have defective teeth. In 1896, the dentists of that country petitioned the Minister of the Interior to organize a Department of Dental Hygiene throughout the empire.

Germany, Great Britain, France, Belgium, Holland, Denmark, Italy, Japan and New South Wales have started to combat this evil. In this country Massachusetts has endorsed it through its Board of Education, and the work is carried on by the Dental Hygiene Council by education through literature, exhibitions and popular talks.

In the State of New York the metropolis has a number of clinics for the indigent poor. Rochester has one. In many states, New Jersey, Indiana, Illinois, Missouri, Iowa, Minnesota, Georgia, Washington, and I don't know how many more, dental examinations have been made in the public schools, and we may rest assured it will not stop there.

In our city we have a rare opportunity. It so happens that the Chairman of the Committee of Dental Education and Oral Hygiene of the National Dental Association is a member of our Society. The chairman of the same committee of the Ohio State Dental Society is a member of our Society. These are in harmony with the committee of your society. This means an opportunity that we may never have again. It means that our City Society may have a distinction of setting an example and crystallizing the type of teaching and work that should be established throughout the country and the civilized world.

We have the assurance of the co-operation of one of the chief dental publications of the country, which is published in Toledo. In fact THE SUMMARY has begun a wise and far-reaching campaign of education already.

I do not believe there is any considerable opposition to the contemplated work of the Society. It is not going to be an easy task. Your committee feels that it will be a heavy burden to organize without cheerful backing by the entire society. In the Rochester

Dental Society they cheerfully increased their dues to make the work a success. We are not recommending that, but we do want every man to give six days' service or its equivalent, $33.00 in cash. Then with the aid of the National Association, State Society and numerous supply houses, we hope to bring together necessary parts to make this coming year's work of the Cleveland Dental Society the greatest and best of its existence. *Will you do it?*

At the close of Dr. Owens' paper a resolution was passed by the Society, endorsing the recommendations of the committee, and instructing it to proceed with the work, and this work is being organized to start the first of January, 1910.

The Chairman of the Oral Hygiene Committee of the National Dental Association has guaranteed to furnish the equipment for the four clinics and this equipment is being secured and placed for the work.

THE NECESSITY OF EDUCATING THE PRESS AND THE PROFESSION *

By F. W. Howlett. D. D. S., Jackson, Mich.

IN the last two years a great deal has been written on the education of the public, and its influence has already manifested itself to us in many ways. I feel that our best workers along this line are limited in their results, and handicapped by two factors, namely, the press and the profession, as a whole. It is these two factors that I wish to take up in this paper. My conclusions are the results of limited, but not imaginary observations; and I trust no one will consider any of my remarks personal, but, that if my ideas vary from his, that he will consider instead, the idiosyncrasies of the writer.

For many years the press reports of meetings of members of our profession, and in fact all articles pertaining to us directly or indirectly, have been of great interest to me, and in studying my collection I do not wonder that the public is hard to educate.

Not one newspaper can we pick up that hasn't some articles which lower the dignity of our profession, and not all of them are paid for, by any means. Why is it that it is next to impossible to get a dignified account of any of our best meetings? Are we not entitled to it? At the national meeting at Minneapolis the account of that meeting was headed in large letters, "Tooth Pluggers' Convention." At one of our state meetings a number of years ago, held at Ann Arbor, the Detroit News said, "There were times when one jaw wrencher had the floor alone, but often a half dozen were sawing the air, and grating their false teeth simultaneously."

One of the rankest reports that I have ever read was the one giving a detailed report of the last meeting of the Institute of Dental Pedagogics at St. Louis. This meeting represented the cream of our profession, and was probably the greatest dental meeting held in the world in 1908. The report was headed in large letters, "Illinois Dentists Demand Patient's Birth Certificate and Tobacco Tag."

---

*Read before the Michigan State Dental Society, 1909.

The article went on to say that Dr. Moorehead, of the University of Champaign taught the student that when a patient presented himself with badly damaged dining room furniture to ask and keep a record of his age, place of birth, his occupation, whether his father and mother lived to an old age or not, whether he smoked or not, if so, what and how much he paid for his tobacco. The article barely mentioned that Dr. Moorehead's address was the feature of the opening session, and after saying that delegates from thirty-eight universities were present, devoted less than one-fourth of the length of the article to their names and the balance of the program.

After the press reporter had interviewed one of the leading practitioners in Detroit, and promised him a dignified report of the last Annual Clinic of the First District Dental Society, there appeared in the Detroit News an article headed in very large letters, "Try Hypnosis in Dentistry."

The Detroit Free Press, of April 12, notified its readers that the people of Kalamazoo and vicinity would have a chance to get rid of aching molars for nothing, as the Southwestern Dental Society would hold its annual meeting the next day, and that it was the first free tooth pulling that had ever been planned for Kalamazoo. It also stated that every visitor would be busy pulling teeth.

The same paper of April 18 announced that state dentists at Kalamazoo had put in a most enjoyable day and added: "Free tooth pulling during the day, and a big banquet at the Hotel Richman were the two leading features of the Southwestern Michigan Dentists' Association's convention today."

At the time of the last National convention in Boston, the papers had similar articles, and so I could go on showing that neither the importance of the meeting nor the location of the press seems to have any influence in regard to the consideration to which our profession is entitled, for such articles are appearing daily in every state in the Union. I think it is an insult to the profession and certainly its influence upon the public is appalling.

A so-called prominent physician of New York was lately quoted in a paper as stating that practically all insanity was caused by some afflictions of the teeth. The reader who cannot appreciate the ridiculousness of such an article is at once exercised over a fear of becoming insane because of a troublesome tooth.

A similar article recently appeared in the Detroit Journal, saying that a youth had extracted a tooth and that he was obliged to consult a dentist and have two more teeth extracted in order to control the hemorrhage. To the average mind this reporter's imagination would not be questioned.

The one idea of the press seems to be to make us appear ridiculous, and they believe in so doing, that they are giving the public an article that is readable and interesting at our expense; but are they? I believe that the press is ignorant in regard to the importance of the meetings, and that it is thoughtlessness on their part, not realizing how dear such meetings are to us, and how much the man who is proud of his profession is hurt by such articles.

I believe that it is our fault that such ideas have not been corrected before, and that it is up to us to educate the press, that the public may not be deceived and that it may profit accordingly.

The press has probably been criticised many times unjustly, for we have many so-called "ethical men" who believe it necessary to keep their names before the public in one way or another, consequently they always rush into print as a news item anything pertaining to themselves or families. Again, many news items are really pure advertisements, as the following clearly shows: "Dr. ———, a rising young man in the profession of dentistry, left his home in the city today to attend a series of lectures given at the Indiana Dental College. He will probably return the latter part of the week." Another received by the editor of the Chicago News, who realized that he was trying to be worked and refused to publish it, shows what the so-called ethical man will do:

"To the Editor of the Chicago News: Dr. ———, who is a graduate of the leading dental college of this city, has moved to ———. He is a deserving young man, has made a special study of regulating teeth and crown and bridge work, standing at the head in his work. The code of ethics prevents the doctor from using the usual methods of advertising, so he cannot take advantage of your columns, but I know that he would appreciate the publication of the above item of information and reciprocate if within his power. He is a friend of mine, and I should appreciate the courtesy. Yours respectfully,

"X. Y. Z."

It is items of this nature that give the press the idea they hold of our profession. A year ago Dr. Bethel in talking to an editor about our State Society meeting of four days on a boat was asked, "What can dentists have to talk about for four days?"

The last time Mr. Rockefeller came to Dr. Stephan's office in Cleveland, there appeared in the Cleveland paper a large picture of John D., with tears rolling down his cheeks and his head on a hot water bag, and in quarter-inch letters above, "Why John D. came home; he had the tooth ache."

In a local paper appeared a picture of a man bowling, and above same in large letters, "Just like pulling teeth," referring to a dentist in a bowling match. And so it goes; wherever a dentist is mentioned by the press, they humiliate the profession by adding some statement which is far from humorous, and has absolutely no connection with the article.

I would suggest that reporters be excluded from all meetings, and that the State Society and each District Society have a regular press committee, whose duty it would be to prepare an authentic and dignified report of all proceedings of interest to the public, and to interview the editor himself, if necessary, in regard to its insertion, that there might be no chance of its being modified.

As it is today, one man is interviewed by the reporter, on the street, another at the door, another at the clinic, etc. In other words, the reporter gets what information he can from men who have no special knowledge of the proceedings, and then makes up the balance of the article according to his idea of what the convention is probably doing.

All the larger papers of the state are represented by correspondents in the smaller places, and these men especially should be interviewed, for their imaginations seem unlimited and their motto, "Anything to fill space."

Even if the dentist were able to educate his patients, a very small percentage of the public could be reached; and as the public as a whole must receive the foundation of its education from the papers, whose powers are unlimited, it seems a necessity that all meetings should be written up by a committee.

Taking it for granted that you agree with me that the press has its part in the education of the public, I believe that it is necessary for us first to educate the profession, and for the profession to educate the press, before we can hope to reach the public. We have received our preliminary education and our professional education, and a good many men consider that when they have secured their diplomas, their title, D. D. S. makes them truly professional men; but I believe that they are just to begin to realize what the word "professional" means, and some men never do.

Not one of us who has not his fault or faults, which he unconsciously practices daily, and the only remedy lies in having them pointed out to him. We who were unfortunate in not having a literary degree, must look to more able men and to study for our development. To criticise a brother practitioner, and to have him consider it in a brotherly way is always a delicate matter. To convince him that all of us have our superiors, and that our mutual development depends upon his development, is one of the objects of this paper.

To educate the public we must each be conscientious and frank with our patients and dignified in our actions. We must speak knowingly to convince the public that we are entitled to its confidence, letting our actions and appearance prove us worthy of our title. As has been said, "A soiled shirt may cover a pure heart, but not a clean skin," so our appearance has a magnified effect on the public. Some men are practicing dentistry today who have mouths in which they themselves would hesitate to work. I know of one member of our society who always says "gooms;" other men who are thoughtlessly using terms every day like *ulcerated teeth*, *gum boils, stomach teeth*, *wisdom teeth*, *canine teeth*, *dead teeth*, *silver filling*, etc. They allow patients to do the same without correcting them. While not entirely wrong, these things do not help to educate the public.

A dentist's remarks which are full of technical terms, but couched in the rankest English will not impress men of education, and cannot help but cast reflection upon the profession. To be sure the cause of this lack must be sought back of the college or university, but wideawake men must absorb some rudiments of good English by coming in contact with people of education. If they cannot absorb, I should advise a little home study.

Many men are not conscientious in advising their patients in regard to the proper work to have done. Many a crown is put on, when an amalgam filling would have been better.

Again, a man makes a charge for a piece of work which causes a pricking sensation of his conscience, and in order to relieve it, says, "Think of the gold I have used." Should that charge be $5 for the gold crown, he intimates that the patient has $4.99 worth of gold. If his time is not worth the fee he is doing the profession an injustice as well as himself, and it is only a matter of time when the patient will realize it, and the impression is reflected upon the profession.

Men advise a certain proprietory remedy and when the patient asks why, they haven't the slightest idea, except that the label says that it is good for such and such a condition. They have no idea of the ingredients, or how they act. Generally the label says that it will cure anything from *baldness* to *chilblains.* I had one patient who had been advised to use *Hand Sapolio* on his teeth, and for fear our lady practitioners might feel slighted by this paper, will say that this prescriber was a lady. Another patient was told to use *Castile Soap,* as that would kill the "germs" that cause tartar. Very often we are told that such and such a dentifrice was recommended for spongy gums, when it is nothing more than an ordinary scouring agent.

Many remedies are advised chiefly because the dentist owns a very little stock. This stock is often given gratis in order to get a name which will help its sale, and I have yet to see a dividend which would compensate a man's conscience for its universal recommendation.

Again, it is unjust for a dentist to prescribe a remedy, to the exclusion of all others, simply because he has on hand half a gross, which the chemist was kind enough to adorn with labels bearing his (the dentist's) name. These remedies should be studied and when the ingredients of a certain dentifrice or mouth wash are indicated, that one should be recommended.

Having given you some of the results of my observation, I feel that I am justified in criticising the profession as I have, for I honestly believe that we, as a whole, are very lax in appreciating the opportunities which daily present themselves to us. I wish now to take up what I consider some of the causes of this seeming indifference, and with your permission I am going to criticise Dental Colleges, Dental Magazines, and Dental Societies in a friendly spirit.

DENTAL COLLEGES

We have in our state a Dental College of which we, as practitioners of dentistry, whether alumni or not, are justly proud. It is self-sustaining, consequently it is not necessary to consider the number of graduates, but the quality. I believe that the standard of our profession will never be raised to the equal of others until our entrance requirements equal theirs. Then the student will be able to reason and assimilate the knowledge to be found there, and when graduated will take his place in a profession which will be second to none.

DENTAL MAGAZINES

Four of our leading magazines that are supposed to cater to our ethical men, and to depend upon them for their support, have for some time been running an advertisement, soliciting inquiries in regard to the proper method of advertising.

This advertisement is headed with the following attractive words: "Why are your ads. different from the ordinary ads. severely condemned by the best Dental Societies." In following up this advertisement, Mr. Elfers, of Cleveland, who is the man behind the gun, assures you that his ads. are ethical, and proves the fact by stating that the committee on ethics of the Nebraska State Dental Society was unable to prove an unethical thing about them.

The following is one of his ethical ads.: MAN'S NEGLIGENCE causes severe losses. A very common one is the loss of his teeth; nature doesn't supply the second set, I do. One reason it's easy to became accustomed to teeth I fit, most people don't return after a day or two with popular complaints. "Didn't know it could be done so easy," is what they say.

Any reason why they shouldn't make a similar remark if I fit your second set of teeth?"

Mr. Elfers states in one of his letters that the cream of business of this age goes to the man who advertises. He sends a book of opinions about his social-business relations and among them is one from H. R. Core, pastor of the Congregational church, Rockford, Ia., which says: "I know Mr. Herbert Elfers to be a keen, energetic, original, friendly, honest young man. He can write dental ads. that will make every one want false teeth." Another, from C. S. Bigelow, president of Ransom & Randolph Co.: "We want to take this opportunity to state that we appreciate the pleasant business relations that we have had together." I mention this testimonial, not to criticise Mr. Bigelow's words, but to show how cleverly it is placed with those of a different type, and the effect that a testimonial from a man in his position must have on many practitioners.

On another page in this book appears a full page advertisement of Frink & Young, on the face of which it would appear that they are soliciting the patronage of the advertising man.

In another booklet entitled, "What's been said without asking," are statements from letters that he has received, under which follow his comments. As an example, I quote: "I don't want to do any advertising that is not strictly ethical, if it can be so done. I don't want to use anything that savors of quackery." And his reply: "After several lengthy letters of explanation about my ads., the dentist who made the above statement accepted a contract and has not expressed a desire to have the ads. discontinued. This is one proof that he believes in the ads. that I write for him. What should prevent the most critical ethical dentist from digesting these facts?"

Another paragraph in the same book says: "To the dentist who believes that all dental advertising is quackery I want to give one reason why my ads are winning universal popularity -I have never met anyone in the dental profession who could produce convincing reasons that my ads. can be classed as quack ads."

Such an advertisement in a magazine in which the young man has confidence, is far from elevating, for, while he answers it thoughtlessly, it becomes more and more serious, as Mr. Elfers follows it up systematically, so I feel sure that he lands many a good man in his net. I think that Dental Magazines should exclude such advertisements or not look to us for our support.

The following is another full page advertisement appearing in one of our leading journals, which cannot help but hurt the profession and cause many susceptible men serious trouble. It is headed in large letters: "OXPARA WORKS WONDERS."

It gives a letter from a practitioner who says: "I have not used a barbed nerve broach in my office for nearly three years, and do not expect ever again to use one. After using *pressive* anaesthesia, I remove all the pulp with a round bar; as soon as hemorrhage stops I dry the cavity thoroughly, mix a thick paste of Oxpara, fill the pulp chamber and cover with cement. Then I go right ahead and fill the tooth. I have used this method in hundreds of cases and never have had a particle of trouble with one of them. I hardly know what a gutta percha point looks like. Nothing can fill a root canal better than nature. Oxpara simply preserves the nerve in the canal for good. Yours respectfully,

"G. L. S., D. D. S."

Following this was published in the next number an article written by the same man, putting forth these same views, which was later sent broadcast to the profession. In the first place, it shows that this article was written as an advertisement pure and simple and inserted in the journal as a scientific article. Second, the article is without merit, because it shows by its own evidence that the writer is of that class of dentists who believe that there is some virtue in that sort of shotgun therapeutics and who have no comprehensive knowledge of the chemical composition and therapeutic effect of the component parts of such compounds.

I believe that such material in our supposedly scientific journals casts a slur upon the intelligence of the profession, and, if published, should be marked as an advertisement, for it is misleading to the young man of the profession, who through lack of experience, is unqualified to judge the merits of such articles. A prominent man of our profession expresses my views exactly, when he says, "I do not think that a journal can be helpful to its readers or advance the best interests of dentistry, by publishing papers which contain misstatements of the truth, or which are vehicles for the expression of personal animosity, or which are empirical or commercial in their tendencies." In citing these cases I appreciate the position of the publishers and realize that it is necessary for them to use the journal as a medium for advertising their goods, and the advertising space for their financial advantage, but I do not think it necessary to accept such articles or adopt such methods for advertising their supplies.

Over half of the space of one of our last journals was devoted to advertisements and 40 per cent. of them were of proprietary remedies, and one of the others devoted two full pages to *cuts of the worst type* for advertising purposes. These journals we are looking up to and depending upon for our advancement.

DENTAL SOCIETIES

Dental societies have catered to supply houses and proprietary remedies for the success of their meetings, and have been known to require of them sufficient money to defray the entire expense of their meetings. This puts the profession under obligation to them, and I think that their complaints that the supply men interfere with their sessions are unwarranted.

The officers of some societies have sent out announcements consisting of cartoons, puns of the cheapest class, and misspelled words, thinking perhaps to attract the reader, whereas, a strictly business-like statement might not be given proper attention. These cannot fail to cause criticism from almost all sources, and just criticisms I believe, because they are far from dignified, and remind one only of the small boy, who wanted to be funny and didn't know how.

In making up a program some societies seem to think it necessary to have a man from another state in order to make their program appear attractive. To accomplish this end they have been known to invite men inferior to many in the state, and men who have no standing whatever in the state from which they come.

We have in the United States about 40,000 practicing dentists, and they are depending upon supply houses for their literature. Is it not a pity that such facts exist at this day and age? Forty-thousand men with little expense could afford to pay capable men salaries sufficient to devote all their time to a National Magazine, edited and controlled entirely by the profession, and they in return could have a truly professional weekly magazine, which would give us papers published very soon after they are read, and the advertisements would be those of only direct interest to the advancement of the profession. As it is today some of our best articles are not published for nearly a year after they are written, at which time they are likely to be back numbers, and then they are often published in two and sometimes more journals.

Our National society today has about 600 members, with about 400 paying dues, and until such time as we can have a National Dental Society and a National Magazine, which will give us strength and organization, can we hope to take our place among the first professions and be able to dictate to the legislatures our needs and get them.

DISCUSSION

DR. T. R. BUTTRICK, Detroit: The man who opens the discussion usually seems to feel called upon to differ from the essayist and I am going to exercise my privilege in the present instance. I am largely in sympathy with Dr. Howlett as to the dignified standing to which the profession of dentistry is entitled in the eyes of the public and in the daily press but I believe that I would reach my conclusions along a somewhat different line of reasoning. If I were to write a paper upon this subject I should select a somewhat different title—say for instance, ''The proper education of the profession would obviate the necessity of educating the press.''

Seriously speaking, I do not believe it possible to get a decent report of a dental convention published in the daily papers under conditions that exist at present. I believe that the press needs education all right enough but I should begin farther back than this.

Dentistry is, comparatively speaking, a young profession and while it is coming to the front with rapid strides, it must necessarily be many years before it takes the standing in the public mind to which we as dentists think it is entitled. As the profession grows older and the benefits to mankind to be derived from the same become better known, it will doubtless take a place commensurate with its importance as a health preserving and a health restoring agent.

I believe the proper place to start is with the colleges. If these are to be merely money-making institutions and run for fees, of course they will be conducted upon a commercial basis and the standard of their graduates will suffer in consequence. I should be glad to see all colleges conferring the title of ''Doctor of Dental Surgery'' independent of the fees of the students for their support. Then they could afford to make the standard for matriculation high and the examinations rigorous. The incompetents could be fearlessly plucked, both for entrance and at the close of the first, second and third years. In this way, and in this way alone, could the standard of the graduates be raised, and the honor of the title of D. D. S. If the profession of dentistry is to have an honorable standing in the eyes of the public, the education and preparation of the dentist must be high and thorough.

Then the dental magazines should be called upon to do their part. Unfortunately these are all run upon a commercial basis and are the organs of the manufacturers and dealers in dental goods and are used to exploit their wares. They are run to make money and their advertising columns are for sale, and many objectionable items find their way into them. These are as a rule edited by ethical dentists but it would be expecting too much to imagine that they could influence the business managements to purge their advertising columns of all objectionable features. It would be like expecting ''the tail to wag the dog!'' But here again the profession is at fault.—If all dentists were ethical there would be no *profit* to the magazines in deviating from ethical lines. You cannot blame the magazines for supplying what a portion, at least, of the dentists must want!

I should like to see a National Dental Magazine ably edited and run on strictly ethical lines and should be glad to contribute my portion towards the support of the same—but once more we must hark back to the proposition of educating the dentist *first*.

What proportion of the 40,000 practicing dentists in the United States (I take the figures of our essayist) do you think could be stimulated to take an interest in such an enterprise or care a picayune whether it succeeded or not?

The tone of the daily press is unfortunately low as a rule and I can think of but very few really first class dailies in the United States such as the "New York Sun," "Times" and "Evening Post," whose news and advertising columns are absolutely clean. I say it with chagrin but we have not one strictly first class newspaper in Detroit—the metropolis of our state—and it would be expecting too much to ask us to raise the tone of the daily press of the whole country. There is a decidedly "yellow streak" in most of the papers of today but this must be what the people want or it would not be served up to them. The commercial instincts of the newspapers dictate that the public shall have what it wants, for circulation is the main thing striven for as upon that depends the advertising rates and *there* is where the money lies. Most everything is treated with levity and respect is shown for nothing, so we cannot expect to come in for more than our share of veneration at the hands of the press.

The individual dentist will gravitate naturally to his own proper level and his standing will not be injured nor improved by the tone of the press in speaking of dentistry or dental conventions. Let each one of us strive to educate himself to his ideal of proficiency and then he can educate his own patients both by practice and precept as to the value to humanity of really first class dental services. You cannot *command* people to respect you and get results.—The only way to do is to so govern your life and practice as to command the respect of your patients and they will do the rest! The charlatan we shall always have with us in all walks and professions for there is a portion of the great American people that loves to be humbugged. Yellow journalism has doubtless come to stay, but let us hope that the profession of dentistry will go forward from year to year raising the standard for the entrance of recruits into its ranks until it shall stand fully established as one of the learned professions.

DR. WARD: I suppose Dr. Zederbaum, in getting me on my feet, had in mind that part of the paper referring to education of the press. I would say that the experience I had was very brief and was not at my solicitation at all. I was led to the press rooms, not knowing that any action had been taken by the society, and not knowing that any appointment had been made. I went at the solicitation of some one else. The thing did not please me, and I saw at once that the wants of the press were not the wants of ethical dentists and I told them that they were not. They said that they appreciated our view point and were very nice about it, but they had a standpoint of their own—viz.—to sell papers by making a conspicuous headline followed by sensational news; so that if we are to start out and educate the press it would be a task which I have not time to do and which I do not want to try out at all. They want a different thing than what we want, and are accustomed to different ways of doing business. In the first place, you would have to spend a good long time to show them the difference between a profession and a trade. There are in fact many of us who have not found it out yet.

One thing in particular appealed to me in the paper under discussion, and that was the starting and running of a national magazine, similar to the one run by the American Medical Association, that is practically free from the influence of manufacturers and dealers in dental supplies. If one would look over today the American Medical Journal and compare the advertisements and the class of matter that is in that journal with the most of our journals, even with one or two that are exceptionally clean, you will find that it is decidedly ahead of us, because there is not the inclination to put in there things of a commercial nature. Everything that goes in there is as nearly professional as the editors and managers can make it. That is a thing that we cannot possibly get under present conditions. Back of all this we have some of the strongest combinations in the United States to educate. The moment some of our talent begins to work at a national magazine, they will try to get their ropes around him, until today it is almost impossible to get the necessary talent together to start a national magazine. What the prospects are I really cannot say. I know there is some financial support now to start a national magazine but what will come of it I cannot say. If we had something to run entirely free from the manufacturers and dealers, and for the profession, we could do a great deal for the education of the profession.

Dr. Bowles: I appreciate the paper of the essayist very greatly. It occurred to me that if we all had ideals similar to his there would be no occasion for a paper of this kind. I have had a little experience in the last two days with the newspapers of this town and I have come to see that there are two sides to this question, as there are to all others. The newspaper men are looking for news; they are not able to discern just the things we would like to have published, but they do know what the public want. The press committee had a talk with the reporters yesterday afternoon, and tried to get them to see this thing from our point of view. They said, "Yes, that is very good, it is educational in its nature, and if the people would read it it would, no doubt, do good, but how many people do you think would read this stuff that you present?" "It has got to have spice in it. You cannot hammer or drive it into their heads in the shape you give it to us." "You may have ideals, and they may be good, but you cannot get them into the people at the present stage of the game, they will have to be educated to them." There is truth in that. Another thing, we have not had a great deal of experience in educating the newspapers. The newspaper man has us at his mercy; if he wants information he will get it. He will get it if the business is transacted in a closed vault. If he cannot get it he manufactures it. We want to give them information and work through them, and thereby reach the public. It behooves us not to antagonize these men, but as far as possible to get them to work with us, and we found these men in this town, for the most part, very reasonable; they were willing to do the best they knew how. They promised to do certain things, and they did publish the first reports of this meeting just as we gave them to them. Before we came we were announced as "Knights of the forceps," "Tooth-pullers," etc. Now the committee showed these gentlemen that there were to be 61 clinics at this meeting, and only one of these was to be the extraction of teeth, and we pointed out to them that this about represented the relative importance of extracting teeth in the dental practice of today. We tried to impress upon them that there has been a decided change of front in the dental profession, and that while there are many older men who still have the ideals handed down to them by the blacksmith and the barber, we are getting away from that. We will have to educate ourselves, of course, before we can hope to educate the press. The press is willing to be educated, but they are not willing, at present, in this town, anyway, to take just exactly what we are willing to give them. They want to make it spicy, as they put it. There has been a press committee appointed to handle this convention, but we are not trained reporters.

Dr. Howlett has read a very excellent paper. At half past eight the reporters are going to be here for a synopsis of that paper. This press committee cannot digest that paper by Dr. Howlett and the discussion of it and have it ready for those men at that time. This is something that we will have to consider. It may be necessary for the essayist to prepare a synopsis of his own paper and give it to the newspaper men in advance. There is a problem here which has to be met, and it behooves us to give it careful thought.

Mr. Winchester: It seems to me, from what we have heard and known, the matter of educating the press is a problem too large for us to undertake. To bring the press to think as we think seems to be an impossibility, and Dr. Bowles has well put it.

I appreciate very much the remarks that Dr. Howlett has advanced in his paper, about educating the dentists and educating the dental journals. Now, the press do not understand (meaning the daily newspapers) dentistry as we do. They have never studied the question and are not supposed to know as much about the progress of dentistry in the past year or so as we do, but the dental journals do, and it is they that are perhaps doing as much to bring down the standing and dignity of the profession, or doing as little to advance it, in a way, as the press, because they really know better. If we could have a national dental journal, run by the ethical men of the country, and if we ourselves were educated, then we could hope, in time, to educate the public.

Dr. Watson: I think Dr. Bowles struck the very keynote so far as the solution of this problem is concerned when he suggested that the essayist himself prepare a brief synopsis of his paper and turn it over to the press committee, and then, in advance of the meeting, in a dignified manner a complete and readable report of the meeting can be prepared and can be handed to the reporters, and we can thus avoid such discussion as we have had here, which are bound to be reported unpleasantly at any rate, and it seems to me that of all of the good suggestions that have been made, this one is the real keynote of the situation, and I should like to see it tried out at our next meeting.

Dr. Schamberg, New York: I feel at this meeting impelled to say a few words on the last essay, in that the writer is to be congratulated on his temerity in bringing to your society a number of sad truths. He has been absolutely impartial in his presentation of the subject matter, whether it referred to the members or whether it referred directly to our profession. He has spared neither, and for that reason no exception could be made to anything that he said. I am firmly of the belief that it does not mean so much the education of the press as it means "cooperation" of the press. In other words, for a press reporter to interpret our remarks as they should be would mean that he must necessarily be a graduate dentist, which is too much to expect of them. They naturally glean from our remarks that which appears to be sensational about our work. If we had a press committee associated with each state organization, to which committee they could apply for information, they would have enough matter that would be sensational, in a way, of course, effected through prophylactic methods in dentistry, that would satisfy the body of the average public, so I believe it means cooperation with the press, which we have not seen fit to comply with in the past. Too often we have felt that we do not want to put ourselves on the same plane with the advertising man and the man who is seeking newspaper notoriety, and have held ourselves aloof from the newspapers, but we are beginning to realize that the newspapers and magazines of this country are the means of reaching the public. One great note of warning I would sound, is that the press committee be fit to handle such subjects and be selected in each state and such matters be given the papers as will benefit the public. They do not want to know the details about porcelain and gold inlays, but they do want to know that which has to do with their general welfare; they want to know what advances are being made. They are not interested in knowing who presented a paper; they want to know what was presented. If our subject matter was turned over to this press committee and gotten in suitable shape I am sure that it will be received. I am quite confident that these reporters would much prefer to sit in their office and shoot craps or play poker, or anything, rather than to come up to the meeting and sit in a warm room; and naturally they have got to get some humor out of the situation, and I think they go away with this humor because they have not been able to understand just what has been said. This is none the less true of medicine, veterinary and pharmacy; in fact, they all get their share of it. It is much like our poking fun, in the comic papers, at the Irishman and Hebrew, but these are things which we must all take nicely and know the spirit in which they occur. It rests with us, however, to try and solve the problem in the manner which has been suggested, and that is by the permanent appointment of a press committee in each one of the state societies. We cannot afford any longer to ignore the public press.

Dr. Howlett (Closing discussion): I wish first to thank you for your kind consideration of the paper and the general discussion you have given it, and assure you that I appreciate it and feel more than repaid for all the time I have spent on this, my first effort, before you. I realize that I touched upon many delicate subjects in presenting this paper, and that in all probability there is no one in the room who was not hit to a more or less greater extent by it. I was myself, so I feel that I was justified in my frankness. I did it, first, because I love my profession and because I wish to develop professionally and to see the profession develop until it will be not only second to none but above all others. I believe that our development is largely due to our organization, and what we need is plenty of willing workers and harmony, to work as a unit, and with that as our motto, I believe that there is no limit to our development. The articles appearing in the papers have prompted this, and have hurt my pride, possibly in a way, as they have all of you. I cannot help but feel that veterinary surgeons, Dr. Schamberg spoke of, have had more consideration in the past in regard to the attitude of the press than we have, possibly. I feel that the discussions have been answered quite thoroughly, and what I hoped for I have not found. I have studied this with the idea to a solution, and have not found it, and have not been able to get it from your discussions. I believe that it all depends upon our development and the people we come in contact with. I think that the only solution is for us each to do our part in our locality, for there is some man, at least, who has influence with every reporter and editor in their city, and it is necessary for him to use that influence. I hope that they can work that out of having a synopsis of the articles for the press after today. Lord pity the man who has to write a synopsis of my paper for the press, I am afraid there would not be room for the headlines, to say nothing of the article.

If what little I have said in regard to dental magazines will bear fruit, and I know it will, because I have talked with a couple of editors of our magazines about it—one of them especially in regard to the criticism that I have made, and he has already criticised the publishers and asked their consideration of those points, and I also talked with the publishers and they admitted it and said that they would see that they would make it cleaner and more of help to the ethical men, for they certainly are catering to the ethical men, and their percentage towards the quack is of very little importance to them in comparing results. I feel that I have nothing more to say, and thank you very kindly.

SAVE THAT MORE NOBLE CONTENTION *

By J. A. Rupert, D. D. S., Meadville, Pa.

THE greatest infirmity of the human heart is selfishness, that inborn desire to work for self and self alone, against which the religious teachings of the ages have been directed. And yet how slow we all have been to receive and accept this surest of means to happiness and success—unselfishness.

If all the members of this society followed the direct and implied teachings of the Code of Dental Ethics this paper, the object of which is to point out the advantages arising from being guided by this Code, would be superfluous, but that all are not controlled by this written guide for our action you will concede.

The compilers of this law governing this and other societies have told us what we should do, and this paper is a rather disconnected set of reasons for pointing why we should walk by this light.

The impression has been growing upon the writer that the men in any community could, without any effort other than by being honest with themselves and their patients and generous with their fellows, so elevate themselves in the esteem of the public that criticism of dental operations or questions of motive and even price would not arise. The dental profession of that community would not be looked upon as a set of men who sought only their own gain, but rather as an honest, self-sacrificing set of men whose word could be accepted. This condition will not come by chance but must be merited to be obtained.

---

*Read before the Lake Erie Dental Society, Cambridge Springs, Pa., 1909.

Does criticism of another's acts or methods improve our own standing in the profession or community? And yet how often it is resorted to by those who are making an effort to boost themselves.

This condition is by no means confined to the dental profession, art, Medicine and the mercantile lines all having their share of such men. And does it pay? It certainly hurts the other fellow, but we can see how in most cases it not only hurts the other fellow but also hurts the one who has hoped to gain thereby.

There will be different degrees of ability and different ways of doing the same thing as long as there are two men engaged in doing the same work. Why, then, do people stand ready to criticise the dentist for having done or not done this or that? Why do they say they do or do not want the pulp removed from a tooth—as if such things were controlled by the whim of a dentist or patient? Why is it that, should a tooth abscess after a dentist has treated one that had a putrescent pulp, the dentist is accused of having used unclean instruments? Who, I say, is responsible for such unjust criticism heaped upon the profession if not its own little members?

How often good men are deterred from attempting things out of the usual, or methods, the value of which the laity does not realize, for fear of criticism by the unscrupulous, as was indicated by the reply of a dentist to the question as to whether he used tin at the cervical margins of cohesive gold fillings, when he said, "I know it is a good thing to do, but I hardly ever do it because I am afraid some fellow will get hold of it and make the patient believe I have used something cheap."

> "Not understood—
> Poor souls with stunted vision
>   Oft measure giants by their narrow gauge;
> The poisoned shafts of falsehood and derision
>   Are oft impelled 'gainst those who mould the age.
>   Not understood."

I do not mean that the truly professional shall "wink" at the wiles of the charlatan, but the quack must be wisely not harshly dealt with.

The man who is most harmful to the profession is the one who will resort to any means to get a patient and then resort to any means to get all out of him that he can. The surest way to discourage him and to weaken his hold is "More Light." If we would take time to show to our patients what good work is, whether done by ourselves or another, and explain to them the important points, such as contour, contact point, occlusion, the imitation of nature, the prevention of anything that will irritate the gums, as well as the durability of the work, the person who believes that all that is required of a dentist is to make a piece of metal, of any shape, called a filling, stay in a hole in a tooth, would disappear and with him the dentist who would be satisfied to render such services. It is the negative rather than the positive suggestion and such treatment will not hinder the other fellow, only when he will persist in doing badly, but will rather help him to do better. It will not make him feel ugly toward you and the truly professional man will profit thereby.

From the standpoint of self-preservation does it pay to heap criticism on the other fellow, for in what light do you stand if, after heaping criticism on your neighbor, you, too, should fail to accomplish that which you had hoped? Your patient has not only lost confidence in your predecessor, but in you as well, and the profession has suffered. Had you spoken kindly of him and helped the patient to see that the profession was striving for their good and that failures were liable to occur wherever human agencies and the frailties of human physical conditions were concerned, you would have had that patient's confidence and would not have been hindered or embarrassed by your own failure. The patient would have held a kindlier feeling for the profession and you would have been considered to be not the least of the men in your community else you would not have been so generous with your neighbor, for they, too, know that it is the little fellows who are most critical.

Furthermore, what honor would it be to succeed where an incapable man had failed, as compared with succeeding where a good man had failed? What profit is it to succeed by hindering another and seeking his ruin?

From a strictly moral standpoint we cannot afford to not be fair. When patients come to us dissatisfied with the services they have received at the hands of another they are unhappy and are particularly grieved with our profession, one of the members of which they feel has wronged them.

This world is burdened enough already with trouble and wrongs, real and fancied, without our striving continually to add our little mite. Shall we, then, continue to do this wrong? It does not help us to have the patient hate the other fellow. How much better it would be for the patient, the other fellow and for us if we sought to pour oil on the troubled waters and made discontent give place to hope and cheer?

This involves the question of common honesty in our dealings with our patients as well as with our fellow dentists.

Is it strictly honest for us to undo another dentist's good work that we may do some work in which we are especially interested?

We sometimes hear "that 'Dr. So and So' removed all the other fillings and put in gold. That it required six or eight days and was an awful strain on them. Oh, yes, most of the fillings were good and had been in the teeth for a great many years, but the doctor said that gold was so much better and looked better and would last longer and so I had him do it." And so it will be when the patient falls into the hands of the next man who can see merit only in some other material or method.

Let us take care that we do not wrong the patient who must suffer and pay for having unnecessary work done, nor wrong the first dentist, who, in his judgment, did what was best for the patient, nor yet wrong ourselves and add to the burden of sin and guilt we must carry through the world.

Such practices also wrong the profession in that they create the impression that the material and not the man behind the material is of the most importance.

The man who will thoughtfully consider a case, honestly place himself in the patient's stead, and try to discover the very best thing to do, eliminating from his mind all question of self-interest, all idea of doing the most profitable to himself, must certainly impress the public with his real spirit and will not fail to do better work, receive just compensation, and be himself a happier and better man.

The gaining for ourselves of that greatest blessing—the consciousness of work well done and of having succeeded through honest effort and methods, and not at the expense of another, of having lived a life that, when we come to the close of it can be looked back upon with comfort and satisfaction, is a worthy motive.

We all have a short enough time in which to do our life's work, and let us strive therefore to make that time profitable to the world and ourselves. If we will live honestly and work faithfully we will be sure to receive sufficient compensation for all our needs. We can meet our fellowmen, yea, even our fellow dentists, with a smile and with love in our hearts, we will be happier and all the world will be better.

Let us then learn that real pleasure comes from the consciousness of work well done, of having done our duty toward all mankind, and last, when we come down to the end of life we will feel more at ease to know that we tried to succeed by honest work and words and not by hindering others.

And now let us in each community live only as a band of brothers amongst whom no contention will ever exist, save that more noble contention or rather emulation as who best can serve and best agree.

I hope I shall always possess firmness and virtue enough to maintain, what I consider the most enviable of all titles, the character of an "Honest Man."

—*Washington.*

SOME NEW FEATURES IN ORTHODONTIA APPLIANCES *

By Herbert A. Pullen, D. D. S., Buffalo, N. Y.

THE title of my paper suggests some limitations as to its text, which, if carried out briefly and concisely, ought to be somewhat of an inducement for my hearers to remain during the reading.

Of the new features in orthodontia appliances which I shall describe to you, there are two which are pre-eminently in the advance, viz., the quality of the material of which they are constructed, and the adaptability of the appliance itself to meet modern requirements.

Considering first the qualities of the materials for appliance construction, I am prepared to state that the alloys of gold and platinum are to be preferred to German silver in every case, for appliances which are to be used inside of the oral cavity. Having described these advantages of the gold appliance over the German silver one in full at various times, I shall only briefly outline the particular reasons why the orthodontist is convinced that the alloys of gold are to be preferred to the baser metals.

1. The alloys of gold and platinum are indestructible in the mouth. German silver is corroded, disintegrated, and the strength and working qualities thus lost during the most important periods of treatment.

2. The alloys of gold and platinum do not tarnish in the mouth unless brass ligatures are used with them. German silver always discolors and presents an unsightly appearance, which no amount of polishing will entirely do away with.

3. It is possible to make soldered attachments directly to a gold-platinum expansion arch and not affect particularly the temper thereof. Any hard soldering upon the German silver arch destroys its temper so that it is unfit for use.

4. The gold platinum appliances are a better investment than German silver appliances since at least seventy-five per cent of the first cost of the gold platinum appliances returns to the operator's scrap gold box, having a definite money value. The German silver appliances are worth nothing after having once been used.

The statement has been made that the enamel disintegration will take place more quickly with the use of the gold appliances than with the German silver (see Grieves article on The Base Metal vs. The Noble Metals in Orthodontia, *Items,* May 1909). My own experience has proven that there is very little difference between the gold appliances and the German silver in this respect except that with gold there is no staining of the enamel rods as is the case with the German silver appliance.

It has also been shown by Dr. Grieves that the enamel is only affected in those places in which retention centres are formed upon surfaces which are not cleaned by the dilutions of the saliva and the pumping effect of mastication.

---

*Read before Lake Erie Dental Association, Cambridge Springs, Pa., 1909

It is therefore necessary that all gold bands be cemented in position, and all removable parts, such as the expansion arch, frequently removed to permit of thorough prophylactic treatment.

In experimenting with iridio-platinum for molar clamp bands I have found that it is too brittle a material for the purpose, as in a large percentage of cases in which this metal was used for the clamp bands, fracture of the bands occurred.

Expansion arches made of iridio-platinum, a sample of which I shall exhibit, are no doubt the most effective for the purpose used of any alloys thus far known. Not only can the greatest amount of lateral spring be obtained, but the temper of the iridio-platinum wire is absolutely unchanged by the blowpipe flame.

It is obvious that the molar clamp band, in order to perfectly protect the tooth upon which it is placed, should completely surround it, or in other words, be provided with a lingual lapping joint, so that the cement may be entirely enclosed upon the surface of the tooth.

In the consideration of the adaptability of appliances to meet modern requirements, the advance which deserves first mention is the use of 17 and 18 gauge expansion arches in children's mouths in which the amount of expansive force is at a minimum, and the larger gauge (16 usually) is unnecessary. Adapted to these smaller arches, also, are the smaller molar clamp bands for deciduous molars, the band part being of a softer alloy than for the adult, and the buccal tube fitting the smaller arhces.

The next point of importance which I consider an improvement in the expansion arch and its adaptation, is the doing away with the friction sleeves and tapered nuts with which the market has been flooded of late.

The prime object of the friction sleeve was to prevent the nut from unturning during mastication and to afford a firmer support for the expansion arch. I have succeeded in obtaining a firmer support for the expansion arch by making the buccal tubes on the molar bands more nearly fit the expansion arches, and, by taking advantage of an inherent quality in the nut itself, I have solved the problem of preventing the nut from unturning during mastication.

I use rather a long nut, which is split lengthwise halfway of its length, the split part pinched together and then turned upon the expansion arch. The constant spring exerted in the split section affords a firm grip which absolutely prevents unturning except with a wrench.

Since the publication of the divided arch a year ago, I have made some improvements in it which adapt it better for the purpose for which it is to be used. Discarding the form in which a single nut with right and left thread is used to connect the two lateral halves of the arch on account of its inflexibilty and inadaptability to the incisors, I improved the other form with the central curved tube into which the threaded lateral halves fitted. The first improvement was the hexagonal nuts, which, lying at either end of the central tube, permit of being turned in a smaller circle than the square nuts, and hence do not strike the incisors.

A flattening of the under or concave side of the labial tube so that its end openings were D-shaped, with a similar flattening of the ends of the lateral halves of the arch inserted therein, prevents turning upon itself, and makes the whole arch as firm as a plain expansion arch.

The proper place for the use of this arch is in adult cases where a great deal of lateral expansion is needed.

The molar clamp band, as I said before, should be made with a lap so that the cement may be perfectly enclosed upon the tooth surface to prevent detritus being retained between the lingual screw and the tooth, predisposing to caries. The buccal tube is short, without a friction sleeve, and is gauged as to its internal diameter so that the expansion arch fits somewhat snugly.

For some years past I have been experimenting with the buccal tube of the molar clamp band in an attempt to make it adjustable. The buccal tube of the clamp bands on the market has to be unsoldered and realigned when the expansion is placed in position, and during the treatment, especially in Class II. and III., after the molars supporting the clamp bands have been tipped distally, the expansion being displaced up or down, the molar bands have to be again removed and the buccal tubes realigned in accordance with the proper position of the expansion arch. This means, of course, the removal of cemented bands and their recementation, which is some considerable amount of work.

My first experiments along the line of adjustable tubes for molar clamp bands consisted of a threaded socket soldered upon the side of the tube which screwed upon a threaded rod soldered upon the buccal surface of the molar band. This did not prove successful, since it could not be fastened but at one point, which was not likely to be the proper angle for the tube. Discarding this for a ball and socket joint, I obtained a very adjustable tube, capable of being set at any desired angle, but presenting a somewhat complicated appearance, and projecting too great a distance from the band, unless soldered mesially or distally from the center of the band, near the angle of the molar.

Finally, I succeeded in perfecting an adjustable tube by soldering a rod of pure gold or pure platinum between the tube and the molar band at the mesial or distal angles of the tooth, the torsion of this rod securing the proper angle of the tube at any time, and the large diameter of the rod giving body or support (fixed) for the tube when the expansion arch was in position.

A molar band of this kind may be cemented upon the tooth at the first sitting, and the tubes adjusted for the alignment of the expansion arch at a subsequent sitting without removing the molar clamp bands, a very decided advantage.

One more feature of importance in connection with the gold appliances of which I wished to speak is the use of the silk ligatures without the necessity of banding the teeth. By proper manipulation of these silk ligatures it is possible to rotate teeth even quicker than by any other method, and to rapidly move them into required positions. The silk used for the purpose is manufactured in France, and is very strong.

THE BROADENING INFLUENCE OF ORGANIZATION*

By L. B. McLaurin, D. D. S., Natchez, Miss., Member Mississippi Board of Dental Examiners.

IT has afforded me great pleasure to be able to meet with this Association. Personally, I value the acquaintanceship here formed with other members of my profession, and feel myself stimulated and helped by the splendid papers we have heard.

Professionally, I may be said to bear to you the greetings and good wishes of the Mississippi Dental Association, as well as our appreciation for the good papers and clinics some of you Louisiana dentists have given us. Closely identified as I have been with the work of the Mississippi Dental Association, I naturally welcomed this opportunity of coming over into your state and seeing what you are doing.

Not that the spirit of dentistry, or the interests and purposes of the profession are bounded by state lines, for I, for one, should be glad to have the Mississippi and Louisiana Associations meet in joint session—say once a year. None of us could determine the good to be derived from such meetings. Since you have so many Mississippi men among you, and since the interests of the profession in the two states are identical, naturally, we of Mississippi feel an especial interest in the Louisiana Dental Association. Let me say that aside from the pleasant recollections I shall have of this meeting, I shall be able to carry back with me many profitable suggestions and much added enthusiasm in my profession.

I take it that every wideawake dentist is interested in association work, and so believing, I shall ask your indulgence in referring to the work of our Mississippi Association. A few short years ago, our membership and attendance was too small to carry much weight, or even to lay claim to be representative of the dental profession in the state. The absurdity of undertaking any of the larger purposes of association work, with so little co-operation on the part of the profession generally, was too palpable to have much doubt as to where the first problem confronting us lay. Those of us who realized the imperative need for a large and representative membership, set to work individually and collectively, to bring every ethical dentist into line and into membership. We contrived to set before every dentist in the states the benefit to accrue from his co-operation with the association. We needed every man whose professional pride could be appealed to, and even tried to reach out for the advertising dentist, promising to teach him good manners if he'd come in. We contrived to make good our proposition, that we would show a dentist that he could not afford not to attend and get close up to the front of the profession, near the music. The results of our efforts—well, we more than doubled the membership in three years, and shortly began to feel so important as an association that we could gravely express our sympathy for the stay-at-home dentist, and make him feel that we considered argument on the advisability of attending, quite superfluous.

---

*Read before the Louisiana State Dental Society, 1909.

Of course we did not build up the association without very different purposes in view, nor were these purposes selfish and narrow. True enough it is that a dentist seeking only his own selfish interests can find reason in plenty for co-operating with his professional brethren, but he is no worthy dentist, much less a true man, who is not imbued with the altruistic spirit of modern dentistry, which recognizes a responsibility toward the public and squarely faces that responsibility. We all know that nothing is permanently successful or enduring in this old world, even midst the motley merchandizing multitude, unless it is founded on truth and exists for some good purpose. Therefore, the most important thing about organized work of all associations is not the educational features of the meetings, not the valuable knowledge gathered from clinics and discussions, nor even the stimulus to self-improvement, and enthusiasm for your profession—these things and all the many other helps an association meeting provides, are well enough, and sufficient reason for an association. But do you not think that the best thing for a dental association to do would be to establish, systematically and thoroughly, among the dentists themselves, the lofty ideals of their calling, an ever present realization of their duty to the public as ministers of suffering humanity, and a clear conception of their opportunities for educating the public as to the importance of oral hygiene?

We are seeking, we say, to bring about such an intelligent appreciation of the need for dentistry that the regular examination of school children will become a general practice. If so, we shall succeed only as we believe the accomplishment of this to be a duty, and if not the first great care of dentistry, certainly not the last. We must believe in the high calling of dentistry, or else how can we persuade others? We are beginning to convince our friends, the physicians, to realize that dentistry is only a specialty of medical practice, and a most important specialty. But first of all let us believe it thoroughly ourselves. How can we expect our medical friends to have due regard for us in the province of our specialty, when so many of us persist in being mere "tooth carpenters?" We are very likely to be taken at our own valuation. The fact is, we *have* been taken at our own valuation, and if this fact militates against our usefulness to our fellowman, let us start with ourselves by correcting it. And when this correction has been thoroughly accomplished, we can with ease bring to the notice of the physicians the importance of dentistry as a branch of medicine and surgery, and they will recognize that dentists as specialists in medical practice are entitled to the same consideration in their field of practice as is the case with any other specialist. It is common knowledge among most dentists derived from experience how much the condition of the mouth has to do with the general health. Some of us dentists are almost daily treating conditions that cannot be otherwise than highly detrimental to health. We very often find ourselves alleviating suffering and in some instances curing diseases for which our neighbor, the medical doctor, has been rolling pills and shaking his wise head. Now the eye specialist has long since forced the physician to admit that aggravated cases of nervous dyspepsia, or of impaired vitality may often be due to eye strain, curable by no more heroic treatment than the proper fitting of glasses. This the physician today knows, and he does not any longer overlook it in diagnosis. Now, we dentists want to suggest politely to the physicians that we, like the oculist, can diagnose and cure some diseases, only the symptoms of which they may have been treating.

On the other hand, we ourselves must often look to the physician for aid. Do we know all we should of the normal and of the deranged functions of the human body outside of the mouth? For instance, do we know sufficient of the diathesis that tends to make our patients susceptible to pyorrhea alveolaris?

We are told that medicine is Nature's handmaid. True enough; so also is dentistry, which has work to do no less important than medicine. We should be prompt to say to the physician, "we respect you and honor your profession; we hold you necessary—nay, indispensable in the scheme of human affairs." Now, we want the physicians to accord us the same distinguished consideration we entertain for them. We need them; we need their educative influence in the homes that are neglecting the children's teeth; we need their influence in spreading a knowledge of oral hygiene; we need the opportunities for eradicating diseases which their proper appreciation would procure; and, too, they need us, and fail when they try to do without us; they need us in more ways and more seriously than I have attempted to suggest. And I propose that we tell them so. Let us tell them so in every effective way that we can, first considering how best this can be done.

Is not the matter clear enough and important enough for your association to take cognizance of? Would it be amiss to ask the Medical Association of your state to meet one of your committees and assist in defining and declaring those reciprocal relations of helpfulness existing between the two professions by reason of the similarity of their field and of the identity of their aims? Is it not probable that the Medical Association would hear with interest and profit some dentist's careful exposition of oral hygiene in its relation to various diseases? Can we not in some way furnish the medical men with an explanation of what dentistry as an organized profession is trying to accomplish? And is not their co-operation a worthy end of our endeavors? A little thought along the lines I have suggested will lead each of you who has caught the spirit of his profession to seek to accomplish something individually and independently through his acquaintance with physicians, and perhaps also with the local Board of Health. The fact is, there is not anything of this kind which your Association has committed itself to that the individual member should not reflect and further by his influence in his own community.

It has been remarked that what we call the learned professions, the four most respected and honored, but the least rewarded—theology, law, teaching and medicine—are alike in this respect, they all live off of and find their sole reason for being, in the sin, ignorance, desire and folly of the human race. Without these vices and afflictions there would no necessity for doctor or lawyer, teacher or preacher. And then, too, they are all alike in this: their highest aim is in that they are all attempting to cure or ameliorate the conditions upon which they are said to exist, while their greatest efficiency is attained when all co-operate in a spirit of mutual helpfulness toward the attainment of their similar ends.

Much could be said along these lines, but the facts are too well known to need repetition. I have only suggested the chiefest work of the association. You can try to do some particular things that can only be brought about by making the individual dentist see and realize his place in the community. I think we are getting a more definite understanding of the equation between dentist and common good, but we need not have much hope for the success of our endeavors until there is disseminated among dentists a broader knowledge of the plain duties and responsibilities of their profession.

PRESIDENT'S ADDRESS *

By D. A. House, D. D. S., Indianapolis, Ind.

HAVING finished the first lap of a century race, the Indiana State Dental Association, in which the dental profession has kept abreast and even in advance of most other vocations of man, it gives me pleasure to welcome you to the beginning of the second lap of this great race, the 51st annual meeting.

The 50th anniversary of our state association is now a part of dental history, and who can gainsay the fact that it was the largest state association meeting ever held, and but few national or international meetings have ever been its equal.

It was notable in that it was the banner year in the enrollment of new members, which was over one hundred in number. It was notable in the character of its program with regard to essayists and clinicians. It was notable in the number of dentists in attendance and in interest and good fellowship.

---

*Read before the Indiana State Dental Association, 1909.

The first president of the Indiana State Association lived to see the 50th anniversary. Who is present today that will see the 100th anniversary?

All must admit ours is a progressive profession, and when we look back for only one or two decades, and see the advancement along all lines of the profession, we have just cause to be proud and enthusiastic. We are progressive because our advancement stands for the betterment and more successful results for the dentist, and a more aesthetic and permanent service for the patient.

Who can compute the value of the many new methods and inventions from either the dentists' or patients' standpoint? Who would discard the application of electricity in machinery, appliances, fusing of porcelain, etc.? Who would throw away inlay casting devices and the many new preparations? Who will ignore the fact that prophylaxis and preventative measures stand high in the profession and demand our attention? Can anyone abandon one or all of these useful things and be progressive? As well return to the old spinning-wheel and loom for the manufacture of cloth, or the old stage coach for travel.

There seems to be a fixed rule that the president of this society in giving his address is supposed and expected to give or suggest some plan by which the society and profession generally should be greatly benefited. Numberless suggestions have been made in the past and various plans have been instituted, and all for our good. So, I have nothing new to offer in the form of a plan, and my mind is about as barren of good suggestions as a desert is of vegetation.

One of the greatest desires of every member of this society is to increase our membership. The greater the membership, the greater the interest in our meetings and the more good will be achieved. Plans have been suggested whereby our membership may be increased; but with all the plans in action there is no doubt in my mind but that much can be done by each individual making a personal canvas. Write or see personally some one whom we know is not a member and have a heart to heart talk with him. I am sure the results will be surprising.

There is a movement on by the National Dental Association by which the various state associations are made subsidiary to the National Association. It means that a member of a state association in good standing can become a member of the National Association by paying annual dues of $2.00. This will make a member of the state association pay an annual due of $4.00 when in attendance of our annual meeting. The $2.00 due the National Association must be paid whether in attendance or not. This also entitles you to a subscription of a magazine which is to be the official organ of the society. This plan seems to me to be most commendable, as it will surely greatly increase the membership of the National Association with a greater attendance, and consequently a closer fellowship of the profession at large. To see and appreciate the amount of good resulting from such a plan we need only refer to the Illinois State Society, with its subsidiary societies scattered over the state, and compare the present membership to that of a few years ago. The plan is a good one and I endorse it heartily.

There is a factor of the dental profession, which, it seems to me, does not always receive its just dues. I refer to the board of dental examiners. We look to them for justice. We expect them to protect us and the public from illegal practitioners even to prosecution. We call upon them to interpret the law, in fact we look to them to protect our every right. In return we do not show the proper spirit in helping them carry on their work. To successfully prosecute a violater of the law it requires the help of the legal practitioners in the locality in which the law is being or has been violated, and every legally registered dentist being equally concerned should assist the state board in securing information. In the past year three cases were successfully prosecuted, and a number of illegal practitioners driven from the state because of the state board's proposed action, and I dare say no one knows the difficulty the board encountered, and especially the secretary of the board, in obtaining sufficient evidence to accomplish what they did.

I understand there are about 2,200 legally registered dentists in the state, while probably about 1,300 are in actual practice. Hence we can see the great difficulty the board has in keeping in touch with those having the legal right to practice and those not having the right. It seems to me the best plan to obviate that difficulty, and one which would greatly lighten the work of the board and at the same time cause little or no inconvenience to the profession at large, would be a law requiring the annual or biennial registration of each practitioner, thus giving the board a means by which they could easily know who is right and who is wrong. I suggest and urge that this plan be adopted.

I heartily endorse the work of the state board concerning the reciprocity feature between the several states. I believe they are working along the right line, and I believe reciprocity to be sane and just. We are confronted along all lines of work either general or special, with the idea of "the survival of the fittest." Then if I am legally and ethically practicing dentistry in Maine, and the state board and state society of Maine endorse my work and recommend me as a worthy practitioner, why should I be deprived of my means of livelihood in Indiana, if for some reason I was compelled to come to this state? Illegally or unethically practicing I should be deprived from practice anywhere. I hope the time will soon come when reciprocity will be recognized by all the states.

Because of the great increase in membership the duties of the secretary are so numerous that it is quite impossible for him to attend to his duties and collect and keep a record of the dues. During the last few meetings his work was lessened by the assistance of a registrar, whose duties are to collect and keep a record of the dues and distribute the buttons. I will suggest that the society take the proper steps in creating this a regular office.

The subject of educating the public in the care of teeth and oral cavity is an extremely intricate one. What to do and where to do it, is a problem, which to this time is not satisfactorily solved. Many parents need enlightenment, for who has not heard them say: "Why fill children's teeth when they must soon lose them?" Or, in a case of a child 8 or 10 years of age with the pulp of the first permanent molar exposed they often say: "Why, I thought that was a baby tooth and would soon be lost." Some of our public school teachers need coaching also. What are we to expect of children's knowledge of their teeth when told by an eighth grade teacher that they have 24 teeth, and when their wisdom teeth come they will have 28?

In examining the physiologies used in the public schools we seldom find more than a page or two devoted to the oral cavity, and in some no mention whatever is made, while they are careful to name and locate every bone in the body. The medical profession and the State Board of Health are everlasting and eternally reminding the public concerning pure food and pure food laws, and just think of the millions of mouths that the instant they close upon a morsel of pure food it is made impure by the hordes of bacteria, both pathogenic and non-pathogenic, which actually swarm in the mouth. So what is to be done? It seems whatever progress is made along that line must be made by the dental profession. It is impossible for the dental practitioner to reach the different avenues of enlightening the public. Why not have a dentist on the state board of health to co-operate with them? Why not have a dental infirmary, supported by the state and cities, for state institutions and city hospitals, to reach the deserving poor? Why not publish a small treatise on oral hygiene for the teachers of our public schools, and they be required to instruct the children at least so many hours during some year or years of their school life? Then let each individual dentist devote a little time, when necessary, in giving to the parent or child or both, the proper information in regard to conditions and care of the oral cavity.

I believe the breach of confidence existing between the dentist and patient is too great. There is seemingly a lack of common interest and feeling in most cases. An individual coming to us for dental services should do so with a feeling of trust and confidence in us that we are going to render them a service just as conscientiously as a service they expect from a general surgeon. We, in turn, should serve them in a manner to convince them that we are honest and sincere on our part, and are going to give them the best there is in us. Mutual confidence lightens our work many-fold and makes it a pleasure to serve and be served. I believe much good can be done in these various ways, and by a combined work of all of them a great service would be given the public generally. I recommend them all.

To the various committees which have labored so faithfully to make this meeting a success I want to express my gratitude, and I want to say in their behalf that all success of the present meeting is entirely due to their untiring efforts.

I would, indeed, be ungrateful if, at this time, I failed to express my appreciation for the honor of presiding at this meeting. I can assure you, though, that while I have not the words to properly express my appreciation, there is within me a feeling which says to you one and all: Thank you.

A PRACTICAL SUGGESTION

By G. A. Bowman, D. D. S., St Louis, Mo.

A better method of holding a crown while polishing, than indicated in January SUMMARY: Take an old-fashioned wood clothespin and trim it down so the open end will enter a crown (either *molar* or *bicuspid*) when pushed together. Simple, cheap, clean and efficient.

INSTRUCTION AND LECTURES ON ORAL HYGIENE IN THE PUBLIC SCHOOLS

ByEmma Meinhardt, Teacher of Public School, Cincinnati, Ohio

The following extracts were taken from papers, prepared by pupils in the class room, on "The Way to Health." They had received a thirty-minute lesson every week during the year 1908-1909 on hygiene.

In March, 1908, they were supplied with the pamphlet, "Care of the Teeth." This was a question and answer leaflet furnished by the "Bureau of Hygiene," of Cincinnati. The children's work shows that the impression made upon them was deep and lasting; they were ready to take suggestions coming from the proper source. In many homes this subject was discussed by the parents and the dentist was consulted.

A lecture was given at the school house one evening and was attended by parents whose interest in the lecture had been aroused by their children. In September, 1909, when the children were asked if they had consulted a dentist during the vacation the replies were very gratifying. This shows that these lectures do an inestimable amount of good in a community and the work continued will bring forth good results.

The teeth are a very important part of the mouth. They are useful in digestion, they grind the food so that the stomach does not overwork itself.

LOUISE, age 14 years.

I always brush my teeth after each meal because there is nothing so ugly as decayed teeth.

ANNA, age 14 years.

Everybody ought to have good teeth to chew his food with. Many people when they get to the age of about sixty, they have no more teeth to chew their food and most of the time have the few teeth they have pulled and use false teeth. Some people who are old and only have a few are often sick from indigestion which is caused from these teeth. And the same people often complain about having toothache.

WILLIE, age 13 years.

Teeth should be cleaned at least twice a day. The dentist should examine the teeth at least twice a year. Good teeth can chew the food well, then it does not take long to digest and it keeps the stomach in order. If food is not well chewed it gives the stomach more work to do. **Elsie**, age 13 years.

You ought to clean your teeth after every meal. The food which sticks between your teeth decays and that is what causes so many people to have a bad breath. When you clean your upper teeth brush down because if you brush sideways you will not get them clean. In brushing the lower teeth brush up. In cleaning the teeth do not use charcoal, cigar ashes and things that have grit in them. These things wear the enamel off of the teeth. **Elmo**, age 14 years.

After eating rinse the mouth out and do not let bits of food stay in the teeth because if the food stays there it will cause the teeth to decay, and you will not be able to chow your food right and you will get stomach trouble. If you do not go to a dentist the teeth will get so bad that the dentist cannot repair them.

Adell, age 13 years.

The teeth are most useful in digestion. If the food is not properly chewed by the teeth there will be trouble further along in the process of digestion. If they are not cleaned they will rot and decay. **Walter**, age 15 years.

Everybody ought to take care of his teeth. The way to take care of our teeth is to clean them on rising and after each meal. When a tooth decays get it filled right away.

Clara, age 13 years.

I keep my teeth in very good order by brushing them at least twice a day. The lower teeth should be brushed up from the gums and the upper teeth down from the gums, so that no bits of food can be left between the teeth to decay.

Pearl, age 12 years.

The teeth are a great help in digesting food and so they should be kept very clean. They should be cleaned at least twice a day and powder should be used at least once. If our teeth are not cleaned properly, bits of food will stay between them and cause the teeth to decay which causes great pain. **Charles**, age 14 years.

I clean my teeth three times a day with a tooth brush, tooth powder and water. When I have a bad or decayed tooth I go to the dentist and let him fix it. I do this because I do not like any false teeth. **Florence**, age 12 years.

I would never clean my teeth, but now I must clean my teeth. If your teeth are not kept clean the food lodges between the teeth and soon they will decay. After the teacher told us to look at our teeth I looked at mine and found them in a serious condition. I noticed that many of my back teeth were decayed. I told my grandmother and she told me I would have to have them attended to.

The next day I went to the dentist and he told me that they were very bad. He filled my back teeth and straightened them. It was very painful but after a year when my teeth were fixed I was glad. **Clara**, age 12 years.

If we do not keep our teeth clean particles of food will stick between them and will become poison and eat away the enamel of the teeth and finally make them decay. When the teeth have decayed they will be painful and have to be removed. When we have no teeth to chew our food and prepare it to be digested it will go down into our stomachs in large pieces and it will be hard to digest. When the food is not well digested it will not make good blood. So we see that our teeth are a very important part of our body.

Marion, age 14 years.

Some of the replies contained a vein of humor, such as the following:

> Always clean your teeth. Clean them three times a day, if possible, if not, twice, once on rising and once on retiring. Your teeth are very important in digestion. If you had no teeth you could not chew your food and the digestive organs would be out of order all the time. Never go to a dentist unless it is necessary, because one of your own teeth is worth more to you than all that dentists can put in your mouth.
>
> Louis, age 12 years.

> Brushing the teeth three times every day after each meal is very important. If not brushed they will get yellow and decay and you will have to go to a dentist and get them filled and fixed for a few dollars. If you clean your teeth with a brush that can be bought for a dime and use some salt water you will not have to go to the dentist.
>
> Arthur, age 14 years.

> The children now days have no good teeth, because no more than they get a nickle, they make a bee-line for the candy store. Oscar, age 14 years.

> Everybody should have his own tooth brush. Have your teeth examined frequently, for this will save you from getting false ones at the end.
>
> Clifford, age 13 years.

ORAL HYGIENE TO BECOME A NATIONAL MOVEMENT AT CLEVELAND, OHIO, MARCH 18th, 1910.

President Taft and the Governors of The United States to be Invited to Attend Opening.

BELIEVING that the wealth and general prosperity of a nation of people depends upon a condition of healthfulness in both body and mind—that there is not a disease to which the human body is liable that is not aggravated by an unhealthy condition of the mouth—that many diseases are, in fact, originally caused by neglected teeth and malnutrition—that health is impaired, beauty marred, happiness destroyed and life shortened by the deplorable ignorance of the hygienic laws governing the preservation of these important organs; the dentists of this country and other educators have inaugurated what promises to be the greatest campaign ever organized for the abolition of disease. This great humanitarian work will be carried on under the auspices of the Oral Hygiene Committee of the National Dental Association, and will be started in Cleveland, Ohio, where an examination of the school children's mouths by the City Society showed that practically 97 per cent. were in need of attention from a nutritional and hygienic standpoint. The work in Cleveland is only made possible by hearty support and co-operation of the Cleveland Dental Society and the Ohio State Dental Society. The Committee believing that our public schools have served as an incubator for the developing and disseminating of more disease than any one single cause known, and that the most effective way of reaching the present generation of Americans is through their children, has deemed it best to concentrate its attention upon the coming generation.

Through the co-operation of the Board of Education of Cleveland, the Committee and the Cleveland Dental Society have established six free Public School Dental Clinics, where school children will be treated for one year at the expense of the committee with the following objects:

1st. To show the general public conditions as they actually exist.

2nd. To show that by proper instruction and care of the mouth 50 to 75 per cent. of the illnesses among school children will be eliminated.

3rd. That with the mouth and teeth in perfect condition and the food properly cared for while in the mouth, the working efficiency of each pupil will be increased from 50 to a much higher percentage.

4th. To secure data which will cause the states to establish and maintain such inspection and care as will insure the best possible working efficiency in our schools.

5th. To show by comparison of data in schools where the examinations and instruction is given and in those where it is not, that the pupils of the former are in better condition mentally, morally, and physically than the latter, and to solicit the support of the public in checking and stamping out a condition which has been proved to be fast undermining the life and health of the nation, a condition which if the dental profession were doubled and trebled many times there would not be enough members to handle it.

On the morning of March 18th, 1910, these six free dental clinics will be opened to the public by the members of the National Committee, one committeeman formally opening each clinic.

In the afternoon of the same day various members of the committee will be called upon to address a meeting composed of Educational Authorities and School Teachers, not only of Cleveland, but from other cities all over the United States as well. It will be the mission of the afternoon meeting to thoroughly explain the value of each particular part of the work and also the part which they and the public must play in making a success of the same. At this time all phases of the question of public school work will be fairly considered and discussed.

At 4:30 o'clock in the evening the Cleveland Dental Society will give its regular informal banquet and entertain the visiting dentists and educators from all over the country.

At eight o'clock the main meeting of the day will be held in Grays' Armory, seating some 4,000 people. An invitation will be extended to the President of the United States to be present or send a personal representative. The attention of every Governor will be called to the alarming conditions which exist in our public school system, and they will be invited to be present or send representatives. The Educational Authorities of all leading cities of the United States, as well as the leading physicians and dentists will be invited to be present, as also will the Cleveland public.

Invitations have been issued to ex-President Eliot of Harvard University, Mr. Horace Fletcher, Dr. W. H. Evans, Commissioner of Health, Chicago, and Dr. Burton Lee Thorpe, President of the National Dental Association, to speak upon this subject in a way that will impress upon every one present the value of perfectly healthy mouths.

Immediately after the inauguration of the campaign in Cleveland, it is the committee's intention to commence this same work in other large cities, especially in Washington, D. C., where possibly more good could be done than in any other city in the country.

To further carry on this work it is the desire of the National Committee to have the President of every State Society appoint a Committee on Oral Hygiene to work in connection with the National Committee, and to have through them, every sub or independent organization in the states elect or appoint committees to work in connection with the National Committee. If this can be done, every organization that is working along the Oral Hygiene line will report to us directly upon what it is accomplishing and when anything new that is worthy of consideration comes from any source whatsoever, it will be compiled along with other good points, printed and mailed to the other committees at work throughout the country, as well as to School Boards, Chambers of Commerce, Boards of Health, charity institutions and every other organization which may be brought into play to advance the interests of the work.

This will give the movement the benefit of the best minds throughout the country and will send a wave over the land which will do far more good in one year than could be accomplished in years by each individual organization working separately.

Such a system, successfully inaugurated throughout the length and breadth of our continent would soon make itself evident in a noticeable narrowing of the broad swath annually cut through the columns of our school children by mal-nutrition and disease.

Keep pure the mouth—the Gateway of Health.

PAUL G. WHITE, D. M. D.

SO far as scientific knowledge has yet gone it tends with constantly increasing emphasis to the belief that not merely the world of plants, but that of animals; not merely living things, but the whole fabric of the earth; not merely our planet, but the whole solar system; not merely our star and its satellites, but the millions of similar bodies which bear witness to the order which pervades boundless space and have endured through boundless time, are all working out their predestined courses of evolution.—*Thomas Huxley.*

THE·SUCCESSFUL DENTIST

WINNING PATRONAGE

By C. N. Johnson, M. A., L. D. S., D. D. S., Chicago, Ill.

AFTER an office is fitted up, the next consideration is to secure patients. This is a problem which has taxed the minds of very many in the profession, and yet it is really a simple matter if approached in the right way.

The most fatal mistake a young man can make is to attempt to gain a practice by newspaper or other advertising.

This statement is made in the present connection entirely aside from any consideration of the ethical phase of the question. Even if it were perfectly ethical to resort to circulars, or hand-bills, or posters, or display advertisements in the public prints, it would still remain a bad business policy in a profession like dentistry.

While there are exceptions to every rule, the generality of patients who come to a dentist as the result of this kind of advertising are not of the class which makes good patronage for any self-respecting young man. Even if newspaper advertising per se were in no wise objectionable, the depths to which it has been dragged by irresponsible imposters would tend to brand it as a doubtful expedient for honest men to traffic with. The stigma of the ''dental parlor'' is a shadow which no young man can afford to have trailing after him through life.

Unless there be present in the individual himself those qualities which draw and hold people to him by the force of his own personality, newspaper advertising will prove at best only a temporary advantage to be immediately lost the moment the advertising ceases; while if the young man possesses those qualities he assuredly has no need of the newspaper to aid him.

Few young men start out with the idea of continuing throughout their entire professional life the habit of paying part of their income to the newspapers for the purpose of bringing in patronage. Their plan usually is to utilize this means for a time till they are well established, and then they fondly hope to be independent of such methods and able to pilot their own bark. The fallacy of this has been demonstrated repeatedly.

Foot note.—This article was originally written by Dr. Johnson for his excellent little book, ''Success in Dental Practice,'' published several years ago, but was so fitting for the series we are printing in this department that Dr. Johnson willingly granted us permission to use it in this connection for the benefit of the profession in general.—Editor.

It is the rarest possible exception to find any young man who has resorted to this kind of advertising ever attaining to any prominence in the profession, or succeeding permanently in a financial way.

Even laying aside the question of respect on the part of professional associates, the history of professional men generally will amply prove that there is no tangible or lasting success to be had by this plan. But granted that there were, this question of respect cannot be laid aside. Men may talk loftily and loudly about not caring what the profession thinks of them so long as they make the money, but sooner or later, money or no money, there comes to the heart of every man an overwhelming desire to be thought well of by his fellows. He may hide it for a time behind the mask of an artificial complacency, but it will not down. It is human nature. If there is a man who is devoid of this desire he is far more to be pitied than envied or emulated, and in that man there is not the element of true happiness.

A revelation of this character came to the present writer while he was yet a young man starting out in practice. It so befell that he chanced to meet and talk with an elderly practitioner in another profession who had almost a national reputation for quackery. He was quite generally accounted to be the chiefest exponent of quack methods of his time, was considered a prince in his way, and one who was brilliantly successful along those lines. It was supposed that he had grown wealthy by his methods, and that he cordially despised the so-called "ethics" of professional life. Said he to me: "I suppose that you intend to practice dentistry ethically, do you?" I thought I detected the semblance of a sneer in his remark, but I had the courage to say to him that such had been my intention from my student days, and that I saw no reason for changing my views.

He looked at me a moment with a queer expression, which soon took on a serious turn, and then broke out: "My dear boy, whatever you do, stick to that. It is the only certain road to success in a profession. I should hate to see a young man like you make the deplorable mistake in life that I have made"—only he did not use the word "deplorable." And then he painted such a picture of what his life really was, in contradistinction to what the world thought it was, and what he wished it were, that I never have escaped the impression his recital made upon me.

The inner history of every man who has followed quack methods for building up a practice will disclose the fact that there is something fundamentally wrong with the method. A man who always remains a quack eventually fails in the respect of his fellowmen as well as his fellow-practitioners, and he who starts out as a quack with the ultimate intention of reforming and becoming ethical as soon as his practice is established, will find that the stigma of his early methods will cling to him long after he has discarded them, and will crop out and embarrass him throughout his entire professional career.

ESSENTIALS TO SUCCESS

If it be true, then, that quackery is a failure as well as a wrong, by what means shall a young man draw patronage to himself in such a way that he may be both successful and respected? I have stated that this is a simple matter, and so it is: but the requirements for carrying it out are somewhat exacting and cannot—must not—be ignored.

No single element in a man's make-up will be found all-sufficient to ensure success in dental practice. In fact, to be a successful dentist requires a rare combination of qualities more exacting than for that of any other calling.

This statement would seem formidable and discouraging were it not for the fact that these qualities are such that they can be cultivated and acquired by almost any young man of ordinary ability. There are some stations in life which to fill properly demand of a man an inherent genius in one certain direction, a genius born in him, and which, lacking this birthright, cannot be cultivated to a successful issue. A great master, whether of music, or art or literature, cannot be made of common clay; neither can the breadth of brain necessary to make a successful President of the United States be imparted to a man by education. The solving of great problems which affect the destiny of nations or masses of people requires a mental capacity not inherited by the average man and which the average man cannot acquire by study. For such things a peculiar mental calibre is requisite which marks a man as something apart from his fellow-men and gives him a distinctive position in the world.

Of such is not the practice of dentistry, and yet I must hasten to add that in this statement I do not in any wise admit a place of minor importance for our calling so far as relates to its honor, its dignity, or its usefulness in the world. It is merely that the chief requisites for the successful practice of dentistry are largely such as can be cultivated, not of course by every chance ignoramus or sluggard, but by the hundreds of bright, energetic young men who are yearly entering its ranks.

EFFICIENCY

In attempting to enumerate some of these requisites the first place must unequivocally be assigned to efficiency. Unless a man be a good dentist and eminently qualified to serve his patients skilfully, he is handicapped at the very foundation; and the thing for a young man to do, if he finds himself lacking in skill in any department of his work, is to so apply himself that the deficiency is overcome and he finds himself on a level with the best.

Mediocrity will not win in this age of active progress,—today there is little room in the profession for the "average man." People are becoming too discriminating to allow a man of meagre attainments to impose on them for any length of time, and the condition no longer exists where mere glibness of tongue can compensate for lack of ability.

It may seem a vague sort of advice to tell a young man to become proficient in his work, but what is meant is this: With almost every recent graduate there are some things which seem more easy of accomplishment than others, and probably at least a few things which seem exceedingly difficult. For instance, he may find that to build a gold filling properly in a disto-occlusal cavity in a lower molar or bicuspid is a problem which taxes him to the uttermost, and of the result of which he is never certain. The thing for him to do the moment he recognizes this particular limitation is to devote his every energy to the mastery of this class of cavities. Let him seek all the light possible on the subject from the literature of the profession, and let him request the privilege of watching some skilful operator fill such a cavity. Let him study the problem from every available point of view and never rest content till his brain has conceived the best way of accomplishing the result and his fingers have learned how to execute it. Success in life is attained only by the constant overcoming of obstacles, and unless a dentist bring this persistent determination into his daily work he need never hope to rise above mediocrity. I would much rather see in a young man the disposition to plod and dig and delve, and the patience to persevere, than to see the highest degree of brilliancy unaccompanied by seriousness of purpose or continued application.

No young man in the practice of dentistry today can afford to stop short of the greatest possible proficiency in his work. A bungling method of operating, or a seeming lack of decision as to the precise thing to do in a given case, is instantly recognized by the patient, and a mental note made of it; while a ready, sharp, and decisive line of procedure, with no hesitation or doubt, appeals at once to the patron and creates confidence. The man who approaches an operation with the conscious conviction that he is entire master of the situation, unerringly commands the co-operation of the patient and accomplishes his work under the most favorable conditions. It is this which draws people to him and which holds them in the firm grasp of an established confidence.

PERSONAL HABITS

Another requisite in building a practice relates to the personal habits of the dentist. The chief article in the dental faith may be written in one word,—cleanliness; and there is no other single word so big with possibilities as this. The operator on approaching a patient should be the very pink and essence of purity. His linen should be clean, his person irreproachable by frequent bathing, his face fresh shaven every morning, if he shaves at all, and his hands most scrupulously cared for. The finger-nails—oh, ye immaculate gods of pristine purity, how often have ye been offended by the finger-nails of dentists! There never was, there never can be, any excuse for a dentist starting to work on a patient's mouth with soiled finger-nails. No matter how many patients the operator may have in a day he should wash his hands thoroughly and dry them carefully every time a patient takes the chair. And this should invariably be done in the presence of the patient as the very last act preceding the commencement of the operation. When a discriminating patient sees the dentist hang the towel from drying his hands and go at once to his work, there is a settled sense of satisfaction on the patient's part, which though often unexpressed, is none the less a potent factor when it comes to recommending other people to a dentist.

There is never any precaution too great to be taken in avoiding offensiveness of whatever character connected with the personality of the dentist. His breath should be the object of especial care, and he should eschew all food materials calculated in any way to leave a taint upon it. To smoke during office hours is the great unpardonable sin, and no dentist who has any respect either for himself or for his patient will commit such a breach.

It would seem to go without saying that the teeth of the dentist, above all things else, should be given the most scrupulous care, and he who fails in this respect cannot well hope to impress his patients when he advocates such attention on their part.

The question of cleanliness must also be carried beyond the person of the dentist, and be made to include his office-fittings and instruments. Everything about the chair should be kept beyond reproach, the linen well laundered and frequently changed, and the cuspidor and other metal accessories polished clean, bright and sparkling. The slightest trace of neglect connected with the cuspidor becomes exceedingly offensive to individuals of fastidious tastes, and, even aside from sanitary conditions, such neglect is short-sighted and prejudicial. The instruments should be cleaned after each patient by scrubbing them thoroughly with a brush and soap and water previous to immersing them in an antiseptic. None of these precautions is ever lost sight of by discerning patients, and no dentist who aims to gain and maintain a good practice can afford in the least to ignore them.

DEPORTMENT TOWARDS PATIENTS

Another important consideration in the building of a practice relates to the deportment of the dentist towards his patients. He should at all times be absolute master of himself so far as his demeanor is concerned, and no matter how many little worries or untoward occurrences arise during the day he should never give way to impatience or ill-humor. In the very worst dilemmas he should sustain himself by the reflection that the exigencies which arise in a dental practice are usually not of a profoundly serious nature, and not ordinarily permanent in their character, so that the thing which appears like a mountain to the young man today may dwindle in importance to a mole-hill a week or two hence. To be a perfectly poised gentlemen under every species of petty annoyance is a wonderfully strong recommendation for any man, and particularly so for a dentist. It has a compelling influence with his patients to make matters run smoothly, and develops in the office an air of quiet and restfulness which has a far-reaching effect among cultivated people.

In all his professional relations he should be the essence of kindness, and if possible, of tolerance. It is, of course, necessary at times to be very firm in his convictions, but his firmness should invariably be so tempered with a calm courtesy that his contention for the right may never seem arbitrary or offensive. Impulse, while in one way an energizing force in a young man's character, is at the same time his greatest danger. Impulse sometimes leads a young man blindly to his own destruction; and even when it is not so serious as this, it frequently results in his embarrassment and chagrin. A good motto for the impulsive young dentist when a seeming affront has been offered him, either by a patient or by his professional associates, is to "think over night before retaliating." If many a man had waited till the following morning to write a letter in answer to some aggravating communication he would have immeasurably strengthened his case and saved himself subsequent humiliation.

Strive to be calm under all circumstances. The power to remain calm in the face of great provocation is one of the surest safeguards against mistake, and at once places the individual at an immense advantage over the man who blusters and fumes. For any man to habitually lose his temper is an evidence of weakness, and for a professional man like a dentist to do so is vulgar. It may sometimes be necessary and proper to stamp out a grievous wrong by an expression of righteous indignation, but any pettish display of temper is disgusting in the extreme and marks the individual who indulges in it as a man unfit to assume professional relationship with cultivated people. To gain the reputation of being a perfect gentleman at all times is one of the best recommendations a dentist can have to win him a permanent patronage.

(*To Be Continued.*)

OUR successors will be a fairer and happier race than we are. I believe in progress; I believe that happiness is the goal of humanity, and I cherish a higher ideal of the Divine Being than those pious folk who suppose that man was created only to suffer. —*Heine.*

MISCELLANY

A PILGRIMAGE TO THE OLD HOME OF THE LATE WILLOUGHBY D. MILLER

By Drs. E. C. Mills and H. M. Semans, Columbus, Ohio

(*Continued from page* 171 *February Summary.*)

Through the courtesy of Mrs. John R. Lowe, of Newton, Kansas, some of Dr. Miller's letters, written while a student and during his early years abroad, have been furnished for the preparation of this article. Inasmuch as they display the sterling qualities, as well as the spirit of humor that entered into his noble character, a few extracts may be in keeping with the nature of this contribution. His keen observation of surroundings is shown by a letter of Oct., '73, in which he describes in detail the furnishings of his room, comparing them with similar articles at home. Incidentally he requests that "one of those caps with a tassel on top like ——— used to wear to smoke in, be crocheted for him, not for that purpose, however, but to wear around the house."

Soon after joining his college fraternity, "Psi Upsilon," he carved its monogram and hung it upon the wall of his room, remarking that it made a very nice appearance.

As an illustration of his reserved manner he states that two lady students roomed in the same house, and "*Bon jour mademoiselle,*" was the extent of their acquaintance. He, however, pays the following tribute, "The ladies in the Michigan University are most noted for their lack of the world's idol—beauty." He rather chides himself that he has not attended church as he had done the previous term, but is amused that Rev. ——— hardly speaks to him any more, probably because he does not give him the Sunday contribution he formerly did.

Jan., 1874, he writes that as a matter of economy he remained at college during the holiday vacation; during a trip to visit his chum at Wayne he heard with pleasure that he was the best scholar in '75.

A vein of humor peeps out in a letter of Dec. 20, 1874:—

"By the way, Olly, as you love your glorious fatherland, as you love the stars and stripes, the idol of freedom, and the bane of tyrants; as you value the connections which fourteen revolving years have woven for you, as you value all that is most dear to you, as you love your good old uncle and , don't put your postage stamp down on the southwest corner of your letter again." Reflects that it is lonesome during the holiday vacation, acknowledges some eatables from home "mashed flatter'n a pancake," but they were splendid. As a conclusion he adds "My love to Mother."

In a letter dated Oct. 18, 1875, his impressions of Edinburg are, that "it is a very aristocratic place, with its upper class consisting principally of gentry and men of fortune, and the lower class which is very destitute. On High street (the street leading from Castle Hill to Holyrood Palace, running through the old portion of the city), Saturday nights, you see the most motley crowd you ever thought of. It is more crowded than around the 'monkey cage' on a show day. Five is the fashionable hour for dinner—some dine as late even as nine, and some don't dine till next day. On 'The Mound,' that is, Castle Hill, where the Edinburg Castle stands, there is one cannon, the 'Mons Meg,'* which is plenty large enough for old man R——— to crawl in and turn around, but it is too old to be of any more service. That is fortunate for us, because in event of a war between United States and England, that one gun might have knocked a hole in the United States big enough to let in the whole Atlantic and sink her at once."

His letter written after his first arrival in Berlin, bears date of April 20, 1876. Sailing from Edinburg to Hamburg he had never experienced such seasickness before, and declares there is no more stormy waters in the world than the North Sea—the little ships, about 200 feet long, being tossed about fearfully. "With a Prussian officer, whom I met on board, came to Berlin and we went into one of those famous "restaurants" to get our dinners. There were about 200 Germans sitting around the tables with their pots of beer before them; everything was as quiet and orderly and decent and respectable as a church, and I venture to say a vast deal more sociability and character than in some churches at home. Every man takes his dinner and drinks his beer and goes about his business and insults no man. There is no drunkenness, no brawling and cursing, no staring at strangers." In referring to the barriers that guard the crossings, before the approach of each train, for the protection of man and beast, he adds, "Here everything is discipline, *discipline*, DISCIPLINE, the secret of German prosperity. In a month's time I will know how I am going to get along here; have engaged a nice place, though expensive; have every opportunity to learn German, which is a great consideration. I am going to try to get a class in English. I will do that or "bust." I expect the latter."

"I do not stay at one place and graduate, simply because I must make the best of my time and money, and I know what to do better than you can tell me. *Verstehen Sie das?*"

His first letter after entering the second year of his dental college work bears date Sept. 9, 1878. He describes the pleasant location of his room, also the mosquitoes. "The first night they ate me all up to my finger nails and toes ditto, but I sprouted out all right again next day and bought some mosquito bar to cover up with. There is but one boarder besides myself at present, a news agent, and he beats all the fellows I ever saw. He calls the landlady 'Boss'—yesterday he said to me at the table right before her. 'I'll tell you the landlady's strong and weak points; her strong point is her butter, and her weak point is her coffee.'

---

*In front of St. Margaret's Chapel on Castle Hill is Mons Meg, a huge cannon formerly believed to have been cast at Mons in Belgium, but now ascribed to native skill (1455).

"He was talking religion to an old Quaker lady here till she became very much interested and she thought he was the best fellow living, and then he up and said: 'Well, I guess that fellow in the Bible was a pretty good sort of a fellow.' "

Adding, "I wish I was out on our old hill a little while to get hold of some of those grapes down there," he concludes with his usual expression of his love to "Father and Mother."

In a letter from Berlin, Jan. 29, 1884, he contemplates a visit to America in July. "I reckon we'll have a 'bustin' big time' when I come home. Let me see, that will have been five years." Requests that nothing be said of his coming, as he desires to surprise his acquaintances. Intends to spend the whole time at Brooks', where those who wish to see him can find him. As several friends in New York and Philadelphia desired to meet him he regrets that he may be delayed.

In a letter from Berlin, Sept. 3, 1884, he reports a smooth voyage on his return from America, and "not sick enough to feed the fishes." Has just attended the meeting of the American Dental Society of Europe, of which he was president, at Vevey on Lake Geneva. With no further comment on the honor that was about to be conferred upon him, he states: "I have been offered a Professorship in Dentistry at the University here, but don't quite know if I will take it yet. It is, as far as I know, the first case in which an American has ever been offered a Professorship in Germany, and I am quite proud of the honor."

Nov. 23, 1884, it was "blixin" cold in Berlin, the coldest Dr. Miller had ever known in November, and it made him feel like home. Reports that he is "busy as ever, or a little busier, as I have my lectures now to get ready and six hours weekly at the clinic. Next Thursday we Americans have a Thanksgiving celebration, Mr. Stanley, the African explorer, is to be present. In 1887 I am laying a big American egg. I don't know whether it will hatch or not. Not much news to tell. We live such a quiet life here. I *never* go out to dinners or parties or anything of that sort. I spend all my spare time in my laboratory tinkering away at one thing and another. I have had applications from two publishing houses urging me to write a book on Dentistry, but I can't just make up my mind to undertake it, I have so much else on hand."

In a letter from Berlin dated Sept. 30, '92, he gives some sound monetary advice to his sister. "Above all things, don't let anybody have your money. You are dead sure to lose it if you do. Don't lend it unless you get *first-*

class first mortgage security. It is almost harder to keep money than it is to earn it. When I was at home last I bought a speck of land in Buffalo for ——— and have just sold it for ———. I wish I had bought the whole town out. I do not care to buy another farm in Licking county unless it is very cheap. There isn't anything to be made by it and may be something to be lost. I shall be across next summer and we shall have a grand game of baseball. Tell W——— I was surprised to hear from Newark that he had fallen over the fence. I hope he struck a ripe melon."

The following, furnished by Dr. A. O. Ross, then chairman of the Program Committee, is interesting in being perhaps the last letter of acceptance to a request to read a paper before a dental society, and also to show the demand upon his time for such duties:

Berlin, W. 5, 11, 1907.
Kurfurstendamm 232.

Dear Dr. Ross—Yours of Jan. 23rd received. My plans for the year are not quite definitely settled and I have already had so many requests for papers that I do not know what to do with them all. I feel, however, that I, as an Ohio boy, ought to give the preference to the other Ohio boys if they want to have me. As far as I can determine at present I shall be in America alright in December, and if nothing particular turns up to prevent I shall be glad to be with you at the meeting of the Ohio State Dental Society in Columbus. It will probably be time enough to settle upon a title of my paper when I arrive in America, which will probably be some time in June. Please inform me if you would require the title sooner.

Sincerely yours,
W. D. MILLER.

Our desire has been to acquaint the profession with the scenes and environment of Dr. Miller's childhood. How strong a factor these were in developing the youth and how clearly the child foreshadowed the man is apparent. His career after receiving his A. B. degree at the University of Michigan in 1875 until his untimely death, needs no comment in an article of this character, suffice to say it has placed his name among the immortals. The late Dr. W. C. Barrett, an intimate and life-long acquaintance, in commenting on Miller's life work, says, "few know the extent of his observations and the value of his discoveries, and that there are other great questions he has determined, for which the world will give him due credit when they are fully comprehended."

The estimate of Chapin A. Harris, in commenting on the life and work of Pierre Fauchard seems most applicable to Miller:

"It is evident that he was one of those masters of science who appear from time to time in every department of intellectual inquiry, and whose extraordinary capacity and acuteness enable them to prepare in the brief space of their active life material for the full occupation of generations of ordinary men who succeed them."

SUPPLEMENT

Notes Historical and Genealogical pertaining to the Miller family. For further data concerning descendants of John H. and Nancy L. Miller see ''Montgomery and Somerville Families,'' by Frank Montgomery, Granville, O., published at Newark, Ohio, 1897.

Dr. W. D. Miller's paternal ancestor, Lewis Frederick Miller, was born in Germany about 1783. At the age of 19 took passage in a sailing vessel and came to America, 1802 or 1803; spent a year or two in Maryland, probably near Hagerstown (?) and worked for a man named John Hinkle. He there met Martha ———, the lady who became his wife—she being of English parentage. In honor of their having met at John Hinkle's, they named their first son John Hinkle Miller. About the year 1805, with his wife, he removed to Ohio and settled near the southern edge of Licking County. Though he had learned the baker's trade in Germany he engaged in farming on coming to America, which vocation he followed until the loss of his eyesight, some 12 years previous to his death, which occurred in Madison township, Licking County, in 1864. His wife, Martha, had died there previously.

He was a man of fair education, noted for his stern integrity, a good farmer and a fervent Methodist. His home was a favorite place for religious meetings. A faithful and true man he commanded the respect of his neighbors and all who knew him.

Children of Lewis F. Miller and Martha.

1. John Hinkle, born March 1, 1813.

2. James Henthorne—married Nancy Irwin—spent his life on the old home farm in Madison township, Licking County, O.

3. David—married a Miss Wagstaff—lived in Newark most of his life.

4. Susan—married Uriah Shaw—lived in Newark, O.

5. Elizabeth—married John Sommerville and moved in an early day to Brazil, Ind.

6. Sarah Ann—married John Snider—spent their lives on a farm in Liberty township near the old home of Dr. W. D. Miller.

John Hinkle Miller (son Lewis F. and Martha), born Thornville, O., March 1, 1813; died Liberty township, Licking County, O., September 23, 1889; married in 1835 at Newark O., Nancy L. Somerville, born October 10, 1814, two miles north of Hanover, Licking County; died Newark, O., June 17, 1879. She was the sixth child of James Somerville and Mary Ann Linn who were married in Ireland and lived near the line between County Tyrone and County Fermanaugh; came to America about 1798, lived near Lancaster, Pa., and in Louden County, Va., till 1805 or 1806, when they removed to Licking County. Their ancestors moved from Scotland to Ireland before the days of William and Mary, being at Londonderry when that city was besieged by King James' army in 1689. They were Scotch Irish Presbyterians.

Children of John H. and Nancy L. Miller:

1. Jared C., born 1836; married Sarah D. Dumbauld April 7, 1859, and died April 18, 1859.

2. Jarusha A., born 1838; married Jesse Laokin April 7, 1859, and died December 14, 1863, leaving Olive, born 1860, and Georga Etta born 1863. Olive made her home with her grandmother Miller until her death in 1879, when she went to her father's at Terre Haute, Ind., where she afterwards married Dr. John R. Lowe, November 5, 1885, he born Monroe Co., Ind., December 5, 1856, (son of Wm. J. and Lucy Ann (Walker) Lowe), received degree D. D. S. from Indiana Dental College March 9, 1881, now a successful dentist in Newton, Kansas. Georga Etta married Charles Isham, of Buffalo, Kansas, and died March 2, 1895, leaving three children: Roy, Beryl and Olive.

3. Mary M., born March 25, 1840; married Austin Ashbrook, of Johnstown, O., October 30, 1860. Removed to Newark, O., in 1864 and have engaged in grocery business since. Children, Maud, who married Frederick Ross; Node, who married Frank Smith and died 1897; Tullie and Joyce.

4. Syntha A., born November, 1842; died in infancy.

5. Sarah A., born January 22, 1845; married October 23, 1862, David C. Brooks, of Liberty township, where they still live. Their children: 1, Ooloosa A., born November 25, 1863; married Mattie Beaver, October 22, 1886, reside near Alexandria; since 1892 he resided on the farm of Dr. W. D. Miller, the residence of which is represented in Fig. 3, running the farm on shares. After Dr. Miller's death he purchased the farm where he now resides. Children: Roe J., born 1888, died 1893; Lla Vere, born 1889; George David, born 1892; Anna Eliza, born 1894. 2. Nina M., born August 9, 1865; married Wm. A. Rusler, November 25, 1884, of Liberty township. Child. Olive Marie, born October 12, 1888. 3. Jennie L., married Edward L. Bishop, of Liberty township. Children: Anna Lou, born September 13, 1888, and J. Willoughby D., born October 7, 1890; is a student in the Medical Department O. M. U. at Columbus, O. 4. J. Miller, married Ella Boyd, born Liberty township. 5. Willoughby D. 6. Leota E.

6. James L., born May 5, 1846; married October 1, 1865, Catherine Iliff, of Van Lue, O. Removed to Shelby, Mich., and engaged in lumber business. Children: 1, Minnie, who married Wm. Cranford; 2, Myrtle, who married James Bonnett and resides near Alexandria, O.; 3, Mata Blond, who married (1) J. C. Blackmer (2) F. D. Weldon; 4, John; 5, Katie, and 6, Cora.

7. Alma R., born August 13, 1849; married 1869 Jacob Zartman, of Newark, where he died 1879. She died September 5, 1891.

8. Leah M., born August 26, 1851; married Wm. L. Browning, of Newark, June 10, 1869. Live in Alexandria, Ohio.

9. Willoughby Dayton, born August 31, 1853, died in hospital Newark, O., following operation for appendicitis, July 27, 1907. Married October 26, 1879 at Dresden, Germany, Caroline Laura Abbot, born Berlin, 1860, daughter of Dr. Frank Peabody Abbot (he born Bangor, Maine, and graduate of Baltimore College of Dental Surgery), and Caroline Luxberg (nee Fay) Abbot, born Berlin. Children—born Berlin: 1, John Willoughby, born August 6, 1880, received his medical degree at Berlin in 1904; is now located in Heidelberg, Germany; 2, Catherine Olive, born July 3, 1883; died July 10, 1909, at Middletown, Conn. She married, in Berlin, July 3, 1903, Prof. Walter Guyton Cady (Ph. D. degree in Berlin, 1900), of Middletown, Conn., professor at Wesleyan University. Child. Willoughby Miller Cady, born January 4, 1907. 3, Amabel Edna, born March 8, 1895; pupil in high school, Middletown, Conn.; resides with mother.

POLISHING THE PROXIMAL SURFACES OF FILLINGS

By E. Ballard Lodge, Cleveland, O.

The problem of polishing the proximal surfaces of gold or other fillings is often difficult at the best. A plan that has afforded me a great deal of satisfaction where teeth were crowded, and when it was desirable to use the polishing strip, was to take the scissors and cut the end of a suitable strip to a point and then to make a hole about half an inch from the end for the insertion of dental floss. A convenient length of floss pulled through six or seven inches, the two ends laid together, the strip thus engaged can be readily drawn between the teeth by first slipping the floss between in the usual way from the occlusal surface and then pulling the attached strip either towards the buccal or lingual side. When the point is in sight it can often be pulled far enough with the cotton carriers to enable the operator to grasp it with the fingers. It is always advisable to coat the strip on both sides with a lubricant, as vaseline.—*Dental Review.*

EDITORIAL

WISDOM FROM THE MOUTHS OF BABES

RICHTER said: "The clue of our destiny, wander where we will, lies at the foot of the cradle."

When the mind is plastic, impressions are more lasting and a habit formed early in life is most enduring.

Reforms to be most effective should begin with the children, and no place seems more appropriate for the teaching of oral and dental hygiene than in our public schools.

As an example of the effect of instruction along these lines given to the pupils of one school, we publish in this issue an article prepared by request specially for THE DENTAL SUMMARY by one of the public school teachers in Cincinnati. It deals mainly with answers given in the form of essays after a course of instruction on this important subject, but they are worth reading and furnish food for thought to interested dentists everywhere.

Although the children's ideas may be crudely expressed, they show that they have been interested in the subject and have grasped some of the main points in the teaching. Aside from this, many of these pupils talked to their parents at home about the teeth and the necessity for their proper care, instilling in the minds of the mothers and fathers the relation of good teeth to good digestion and good health. And, as the teacher states, when the attention of the parents was called to this, many of them sought the services of a dentist for their children.

Now, if the good results from instruction in a single school are so far-reaching, who can estimate the enormous benefits to mankind that would accrue from such instruction in all the public schools throughout the length and breadth of our great country.

DENTAL SURGEONS FOR NAVY AND ARMY

When we consider that there are now more than 44,000 men in the navy of the United States and only one dental surgeon in the entire service, the great need of proper legislation to establish an efficient corps of dental surgeons becomes apparent.

Surgeon-General Rixey in his recent annual report refers to the matter of dental legislation as follows:

"The pressing need of the naval service, in respect to that great source of disability represented by the teeth, still remains neglected by the failure of the Sixtieth Congress to make legislative provision for the appointment of dental surgeons to serve the officers and enlisted men of the navy and marine corps.

"The needs of the service at the time the original proposition for dental surgeons was made were set forth, and since then each succeeding year has furnished additional evidence of the urgency of the provision sought. As a matter of fact, every proper effort has been made to secure favorable action by Congress in this matter.

"As finally amended, the bill provided that thirty dental surgeons—which, it contemplated, were at first to be appointed, with the rank of acting assistant surgeon, but that after a probationary period of three years from the date of their original appointment, they were, if mentally, morally, professionally and physically qualified, to become eligible for reappointment as dental surgeons in the United States Navy, with the rank of assistant surgeon.

"Dental surgeons would constitute an integral part of the medical department, and their commissions would carry the pay and allowances of assistant surgeons, including the right of commutation of quarters where not furnished in kind, allowances for fuel and light, increase of pay for length of service and the privilege of retirement for disability or age.

"The Navy Bill will accomplish everything necessary to make the service attractive to young men of ability, and, as said before, the dental profession is, or should be, content with its provisions."

The Navy Bill referred to, known as Senate Bill No. 1015, introduced by Senator Dick, of Ohio, was read twice, referred to the Committee on Naval Affairs and reported back to the senate and now reads as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That the President be, and he is hereby, authorized to appoint dental surgeons to serve the officers and enlisted men of the Navy and Marine Corps, not to exceed thirty in all. Said dental surgeons shall be attached to the Medical Department of the Navy; shall have the rank and compensation of acting assistant surgeons in the navy; shall be graduates of standard dental colleges, trained in the several branches of dentistry; within the age limits of twenty-four and thirty-five years; of good moral character and professional standing, and shall pass a physical and professional examination; and their appointment shall be for a term of years and revocable at the pleasure of the President: *Provided*, That the dentist now employed at the Naval Academy shall not be displaced by the operation of this Act: *And provided further*, That the rank of acting assistant surgeon shall carry the like pay and allowances of the rank of assistant surgeon; and all dental surgeons shall, after three years' service from the date of their first appointments, if mentally, morally, professionally, and physically qualified, be eligible for appointments as dental surgeons in the United States Navy, with the rank of assistant surgeon, and the right of said dental surgeons to promotion shall be limited to the next two succeeding grades.

There is also pending in the House an Army Dental Bill establishing a dental corps of 45 members with rank and standing virtually the same as outlined in the above Navy Bill.

One of the objections to the present army legislation for dental surgeons is that the appointed dentists are simply civilians; so-called "contract dental surgeons" with no real rank or standing in the army. Regarding such men Mr. Taft, when Secretary of War, said: "I have some personal knowledge of the unsatisfactory relations that exist between the contract surgeons and the army. There are no persons who learn so quickly the difference between a real and a 'mex' officer, if you may call him such, as do the enlisted men. The life of a contract surgeon, especially one who is at all sensitive, is taken up in resenting slights. It is not a healthy attachment to any branch, but a collection of men that are neither fish, flesh nor fowl, and I think the *esprit de corps* of the whole service, especially that branch of the service, would be much better if the contract surgeon could be entirely eliminated."

The bills now pending, if passed, will give the dental surgeons equal standing with the medical corps of the same rank, providing for retirement, longevity pay, pensions, etc., the same as for medical corps officers.

It is hoped that the legislation will be enacted, for if not all that some may desire, it is a step in advance and merits the united support of the dental profession. Most of the State Dental Societies have endorsed these bills and our readers should take it upon themselves individually to write to their congressmen urging their support of the measures.

TESTIMONIAL BANQUET IN HONOR OF DR. G. V. BLACK

A testimonial banquet, under the auspices of the Chicago-Odontographic Society was tendered Dr. G. V. Black at Congress Hotel, Chicago, on the evening of January 29th, 1910.

It was a remarkable gathering of representative dentists from England, Canada and different sections of the United States who assembled to pay their respects to our greatest scientist, Dr. Greene Vardiman Black.

The elegant "gold room" in the Congress Hotel was selected for the occasion. The tables were beautifully decorated and the sweet strains from the orchestra added charm to the affair.

About 400 guests were present and there was a genuine outpouring of love and appreciation for Dr. Black and his great services to dentistry.

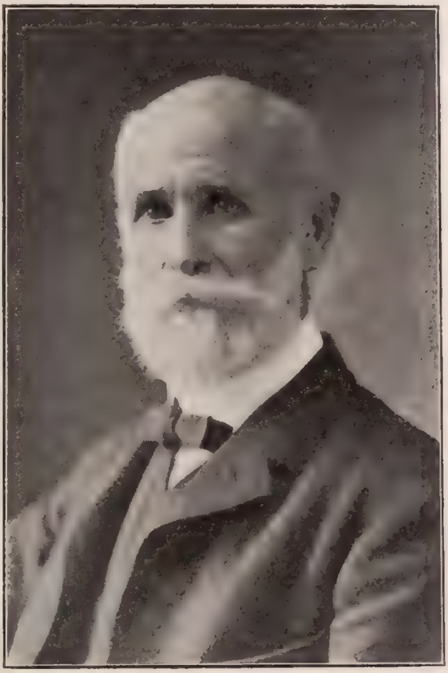
It was probably the most remarkable occasion of the kind ever given a member of the dental profession.

The regular menu was appreciated, but it was the feast of good things said by the after-dinner speakers that was most satisfying to the assemblage.

The speeches and toasts all breathed a spirit of friendship and appreciation.

Dr. W. H. G. Logan, president of the Chicago-Odontographic Society, acted as toastmaster and toasts were responded to as follows:

"Some Personal Reminiscences of Dr. Black," by Dr. T. L. Gilmer, Chicago. Dr. William A. Evans, Commissioner of Health of the city of Chicago, responded to the toast, "The Professional Man's Duty to His Community." Dr. A. W. Thornton, Toronto, Can., responded to, "My Country and My Profession." Dr. J. Leon Williams, London, Eng., "The Significance of Unity and Loyalty in the Progress of Our Profession." Dr. Henry W. Morgan, Nashville, Tenn., "The South and Dr. Black." Dr. E. C. Kirk, Philadelphia, "Dr. Black and the Scientific Investigator." Dr. G. V. Black responded to the subject, "Goodnight, But not Goodbye."



GVBlack

The gifts comprised a gold coffee service from members of the profession in the east. It was presented by Dr. R. Ottolengui.

Twelve silver place plates were given by western men. Dr. T. W. Brophy made the presentation.

A chest of flat silver, some seven dozen knives, forks, spoons, etc., and a carving set were given by the members of the Illinois State Dental Society —Presentation by Dr. C. P. Pruyn.

A candelabrum was given by the Faculty of the Dental Department, University of Western Pennsylvania. The presentation was made by Dr. H. E. Friesell.

A book containing resolutions and other memoranda regarding the banquet, also the signatures of those present, a gift from the Chicago-Odontographic Society was presented by Dr. D. M. Gallie.

A cast gold skull charm from Dr. D. O. M. LeCron, St. Louis, was presented by Dr. J. D. Patterson.

A vellum sheet elaborately illuminated and containing the names and compliments of the senders was given by the Dental Society of Berlin.

In addition to these there were many smaller tokens, letters and various gifts, all tending to show the estimation in which the illustrious recipient is held by the brethren of his profession.

Dr. Black has been a voluminous writer. A partial list of his writings from 1866 to 1910, compiled by Dr. A. D. Black, contains the titles of six books and five hundred scientific and other articles prepared by him.

A brief sketch of the dental career of Dr. G. V. Black is as follows:

He received the degree of D. D. S. from the Missouri Dental College in 1877; the degree of M. D. from the Chicago Medical College, 1884; Sc. D. from the Illinois College, 1892; LL. D. from the Northwestern University, 1898. Dr. Black was born near Winchester, Scott Co., Ill., Aug. 3rd, 1836.

Family moved to farm seven miles southeast of Virginia, in Cass Co., Illinois, in 1845.

Attended country school about three months each winter.

Studied medicine with Dr. Thomas G. Black, a brother, at Clayton, Ill., 1853-1856.

Studied dentistry with Dr. J. C. Speer, Mt. Sterling, Ill., 1857.

Practiced dentistry at Winchester, Ill., 1858-1862.

Enlisted in 129th Illinois Volunteers, 1862.

In hospital at Louisville, Ky., six months, and discharged for disability, 1863.

Practiced dentistry in Jacksonville, Ill., 1864-1897.

Joined Missouri State Dental Society, 1866.

Joined Illinois State Dental Society, 1868.

First important dental paper on "Gold Foil" read before Illinois State Dental Society, 1869.

President Illinois State Dental Society, 1870-71.

Invented one of the first cord driven, foot power, dental engines, 1870.

Lectured on pathology, histology and operative dentistry, Missouri Dental College, 1870-1880.

First President of the Illinois State Board of Dental Examiners, 1881-1887.

Wrote book "The Formation of Poisons by Micro-organisms," 1884.

Professor of Dental Pathology, Chicago College of Dental Surgery, 1883-1889.

Introduced teaching of Dental Technics, Chicago College of Dental Surgery, 1887.

Wrote for the American System of Dentistry, chapters on "General Pathology," "Dental Caries," "Pathology of the Dental Pulp" and "Diseases of the Peridental Membrane," 1886.

Wrote book "Periosteum and Peridental Membrane," 1887.

Voted life membership in Illinois State Dental Society, 1889.

Professor Dental Pathology and Bacteriology, Dental Department, University of Iowa, 1890-91.

Wrote book, "Descriptive Anatomy of the Human Teeth," 1891.

Wrote series of articles entitled, "The Management of Enamel Margins," *Dental Cosmos,* 1891.

Professor Dental Pathology and Bacteriology, Northwestern University Dental School, 1891-1897.

Chairman Section on Etiology, Pathology and Bacteriology, World's Columbian Dental Congress, 1893.

Report on Dental Nomenclature, World's Columbian Dental Congress, 1893.

Wrote series of articles entitled, "An Investigation of the Physical Characters of the Human Teeth in Relation to Their Diseases and to Practical Dental Operations, Together With the Physical Characters of Filling Materials," *Dental Cosmos,* 1895-96.

Dean and Professor of Operative Dentistry, Dental Pathology and Bacteriology, Northwestern University Dental School, 1897, and at present.

President, National School of Dental Technics, 1897.

President, National Dental Association, 1900.

Awarded First Fellowship Medal, by the Dental Society of the State of New York, 1905.

Special guest at Annual Meeting of American Dental Society of Europe, 1906.

Wrote work on "Operative Dentistry," in two volumes, 1908.

HIGH PRESSURE ANESTHESIA

By W. T. Jackman, Cleveland, O.

If you would succeed with the high-pressure syringe, carefully observe the following rules:

First: Never use it in a carious cavity, mainly for two reasons—because (*a*) the mouths of the dentinal tubuli are filled with debris, therefore you will not be likely to succeed, and (*b*) if you do succeed in desensitizing the pulp you will probably force ptomaines into it which will be almost sure to cause its death later. If it does not die, it will probably give the patient trouble for which the cocain will get the blame.

Second: Always enter the tooth from some surface point, for by so doing you will have a definite idea as to the relative distance to the pulp. This knowledge is imperatively requisite, for when you recall the case of my patient here you will remember that much more time is required to get the desired result than if you were entering a lower incisor at the gingival line.

Third: Age and temperament must be carefully considered, particularly as to the time required for desensitizing. We know that the dentinal tubuli and pulp in young patients are much larger than in aged ones, therefore much less time is required to obtund their teeth. This is particularly true of the nervous and bilious temperaments as compared with the sanguine and lymphatic. The danger of injuring the pulp by the use of cocain, as suggested above, is so remote that the ultra-conservatism which prevents its use spells injustice to the patient.—*Dental Cosmos.*

NEW PUBLICATIONS

Modern Dental Materia Medica, Pharmacology and Therapeutics—By J. P. Buckley, Ph. G., D. D. S., Professor and head of the Department of Materia Medica, Pharmacology and Therapeutics, and formerly Director of the Chemical Laboratories, Chicago College of Dental Surgery. Philadelphia: P. Blakiston's Son & Co., Pub., 1909. Price, cloth, $2.50 net.

''This book,'' says the author, ''is intended to include all that a dentist should know about drugs and remedies and their practical application in the treatment of disease.''

The text covers 376 pages and is divided into two parts: The first being devoted to Materia Medica and Pharmacology, with enough Therapeutics to indicate clearly the various drugs and remedies. It also includes Prescription writing, Metrology, Medical Latin and Incompatibility. The second part of the work is devoted to Practical Dental Therapeutics.

The author states that ''no attempt has been made to describe all of the many methods of treatment, nor to give the endless formulas suggested in the various textbooks and journals, for the pathologic conditions mentioned, but in most instances only the methods by which the conditions are treated in the author's own practice are detailed. These methods have been gleaned from clinical experience, from extensive reading and from observation and association with other practitioners; and in both private and infirmary practice they have given good results.''

No brief review can give the reader an adequate idea of the excellent methods prescribed: they must be read and digested to be fully appreciated. The best recommend for the book is that it comes from the pen of Dr. J. P. Buckley, an indefatigable student, a great teacher, and a man who has done perhaps more than any other one man to place dental therapeutics on a scientific basis.

The book is well printed and bound and contains a store of useful information. We heartily commend it to our readers.

A Manual of Normal Histology and Organography (Second edition, revised)—By Charles Hill, Ph. D., M. D., formerly Assistant Professor of Histology and Embryology, Northwestern University Medical School, Chicago. Second revised edition. 12mo of 468 pages, with 312 illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Flexible leather, $2.00 net.

In this book of 450 pages the fundamental facts in histology have been presented in a clear and concise manner, and theories advanced only to simplify the facts and aid the memory in their retention.

The oral cavity is given more attention than is usually given this subject in a treatise of this sort. The author says: ''Neglect of proper care of the teeth is a common failing and the cause may be traced directly to a lack of knowledge of their structure and function. This chapter has, therefore, been enlarged. The author is greatly indebted to Prof. F. B. Noyes, of the Northwestern Dental School, for contributing most excellent figures on this subject. His critical essays form the basis for the descriptive part of this chapter.''

The contents of the book briefly summed up are: Preparation of Material (for study). Development, the Cell Tissues; Circulatory System, Blood, Marrow and Lymphatic Organs; Digestive System, Mouth, Teeth, Tongue, Pharynx, etc.; Digestive Glands;

Organs of Respiration; the Urinary Organs; Reproductive Organs in the Male; Reproductive Organs in the Female; the Skin; Peripheral Nerve Terminations; Spinal Cord; the Brain; the Eye; Organs of Hearing; Olfactory Organ; Laboratory Directions; Index. The book contains the most concise presentation of the subject of any we have seen, and the author has a happy faculty of writing in an interesting yet convincing manner. It is a most excellent book for any who want the fundamental facts in histology.

The work is profusely illustrated, well printed and bound in flexible binding.

DENTAL LAWS CONDENSED—THE REQUIREMENTS OF BOARDS OF DENTAL EXAMINERS THROUGHOUT THE CIVILIZED WORLD—A BRIEF GUIDE—By Alphonso Irwin, D. D. S., Camden, N. J., 1910.

This book contains information in regard to requirements of State Dental Laws, the time of meeting of the different State Examining Boards, rules governing examinations, and other information that applicants will want to know.

It also gives information regarding the requirements to practice in the Canadian Provinces and in the different foreign countries.

It is a useful book for those interested.

DENTAL DIRECTORY OF ILLINOIS. Published by the Committee on Dental Directory of the Illinois State Dental Society, 31 Washington St., Chicago; 1910. Price, net, $2.00.

So far as being progressive is concerned Illinois has taken the lead of the other states for some years, and here is another step in advance, a dental directory of the dentists of Illinois. Yet it is something more than an ordinary directory. In the announcement we read that the publication of this directory was undertaken for the purpose of supplying definite information regarding those who are engaged in the practice of dentistry in Illinois, in the belief that such information would be of interest to the profession, of much value to the Illinois State Dental Society and its component organizations in maintaining its large membership and in increasing its usefulness, of service to the Illinois State Board of Dental Examiners in the enforcement of the dental law, and an aid for the mutual good of the dental supply houses and members of the profession by a more nearly correct mailing list than has been available heretofore.

The book contains a History of the Illinois State Dental Society, by Dr. Edmund Noyes. The Present Organization and work of The Illinois State Dental Society, by Dr. Arthur D. Black. The Code of Ethics, by Dr. C. N. Johnson. The New Illinois Dental Law, by Dr. C. R. E. Koch. Registration and Reciprocity, by Dr. Chas. P. Pruyn. The Illinois Dental Law, 1909. Members of the Board of Dental Examiners. List of Dental Colleges in the United States and Canada. List of Officers of Illinois State Dental Society and the Component Societies.

Then comes List I. An alphabetical list of all cities and towns, with list of dentists arranged alphabetically for each city and town. Alphabetical list for Chicago and suburbs.

List II gives sectional lists arranged in accordance with the territory within the jurisdiction of each of the component societies of the Illinois State Dental Society. The list of Chicago dentists is arranged according to section and street location in progressive order.

List III includes an alphabetical list of all dentists in Illinois with index to pages on which each name may be found in the other lists. In the directory the names of all dentists, members in good standing in the State Dental Society in 1909, are printed in capital letters. After each name is printed year of graduation, college is indicated and year license was issued is given. Those who were in practice before the passage of the first dental law, are also indicated. Where street numbers have been changed in Chicago, both old and new numbers are given.

The directory is both complete and unique and the committee consisting of Drs. A. D. Black, chairman, Dr. Fred. W. Gethro, and Dr. R. W. Hood, are to be congratulated on the outcome of their labors.

SOCIETY·ANNOUNCEMENTS

LOUISIANA STATE DENTAL SOCIETY

The thirty-second annual meeting of the Louisiana State Dental Society will be held in the Groenewald Hotel, New Orleans, La., May 9, 10, 11, 1910, instead of the 16, 17, 18, as formerly announced.

SOUTHWESTERN MICHIGAN DENTAL SOCIETY

The next meeting of this society will be held in Coldwater, April 12, 13, 1910. C. W. Johnson, *Sec'y.*

EASTERN INDIANA DENTAL ASSOCIATION

The Eastern Indiana Dental Association will hold its thirty-ninth annual meeting at Cambridge City, Ind., April 12 and 13th, 1910.

A. O. Martin, *Secy,*
Richmond, Ind.

ILLINOIS STATE DENTAL SOCIETY

The forty-sixth annual meeting of the Illinois State Dental Society will be held in Springfield, May 17, 18, 19, 20, 1910. In addition to an especially good list of essays and clinics, an unusually attractive supply exhibit is being planned. J. F. F. Waltz, *Sec'y,*
Decatur, Illinois.

NEW JERSEY EXAMINING BOARD

The New Jersey State Board of Registration and Examination in Dentistry will hold its semi-annual examination in the assembly chamber of the State House at Trenton, N. J., July 5th, 6th, 7th, 1910. Practical work on the 5th, and the theoretical examination the 6th and 7th. All applications must be in the hands of the secretary ten days prior to the meeting. Applicants must send preliminary credentials and photograph with the application or it will not be accepted. Sessions begin promptly at 8 a. m. each day.

Charles A. Meeker, D. D. S.,
29 Fulton St., Newark, N. J.

KENTUCKY STATE DENTAL ASSOCIATION

The forty-first annual meeting of the Kentucky State Dental Association will be held in Louisville, Ky., May 26, 27, 28, 1910. An unusually interesting and profitable program is being arranged for this year, and a cordial invitation is extended to all ethical members of the profession.

W. M. Randall, *Secretary,*
Cor. Brook and Broadway, Louisville, Ky.

THE NORTH CAROLINA DENTAL SOCIETY

The thirty-sixth annual meeting of the North Carolina Dental Society will be held July 13th to 16th, 1910, at Wrightsville, N. C. The Seashore Hotel will be the headquarters. ARTHUR HYNES FLEMING, *Sec'y*,
Louisburg, N. C.

LAKE ERIE DENTAL ASSOCIATION

The forty-seventh annual meeting of the Lake Erie Dental Association will be held at Hotel Rider, Cambridge Springs, Pa., May 17, 18, 19, 1910. All reputable practitioners are cordially invited to attend.

V. H. MCALPEN, *Sec'y*.

SOUTHWESTERN NEBRASKA DENTAL SOCIETY

The fifth semi-annual meeting of the Southwestern Nebraska Society will be held at Oxford, Neb., Tuesday, March 8th. Dr. C. Woodbury will be with us. All ethical practitioners are invited to attend.

W. A. MCHENRY,
Nelson, Neb.

ALUMNI DENTAL ASSOCIATION OF STATE UNIVERSITY OF IOWA

The annual meeting of the Alumni Dental Association of the State University of Iowa will be held at Iowa City on the 8th and 9th of March, 1910. All ethical practitioners, whether alumni of the Dental Department of the State University or not, are urged to be present. "Come, let us reason together." DR. H. H. GARDNER, *Secretary*,
Williamsburg, Iowa.

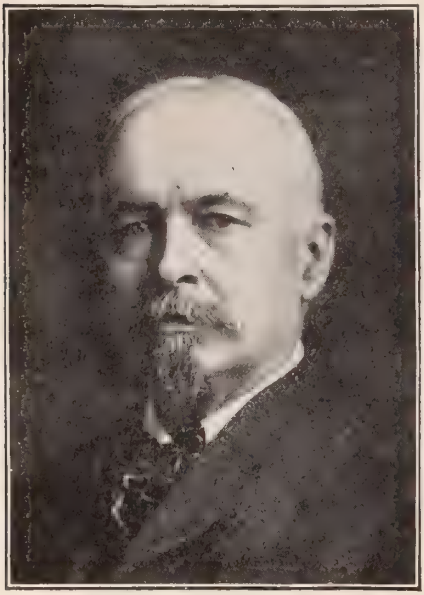
CIRCULATING DENTAL CLINIC

The Central Chairman, Dr. S. M. Weaver, Rose Bldg., Cleveland, Ohio, wants those dentists who will contribute worthy clinics for the Circulating Dental Clinic, to send them to him *immediately* as they desire to get the clinic started on its circuit without further delay. This means you!

V. INTERNATIONAL DENTAL CONGRESS

All colleagues who have taken part in the V. International Dental Congress, and who have not received the supplement of the Congress Paper, which had been sent to the members some time ago, are requested to send their names, and exact address, as well as the number of their Congress-card to the secretary of the V. International Dental Congress, Dr. med. Konrad Cohn, Berlin W. 35, Potsdamerstr. 46. This only will enable us to publish an exact list of all the visitors of the Congress, and to send to the members the prints, which have been published up to the present. A great number of letters has been returned, the addresses having been indicated incompletely.

OUR LECTURES AND OUR LECTURER.



John Worthington Dowd, LL. D.
Our Lecturer.

We are now ready to fix dates for lectures before Teachers' Associations, public schools and the public generally, and request correspondence looking to this end from dental societies and individual dentists in Ohio, Michigan and Indiana.

For this work we have secured the services of John W. Dowd, LL. D., an educator and lecturer of force, ability and wide experience. Mr. Dowd has made a careful study of all branches of the subject of dental education, and is prepared to present them in a popular, interesting and convincing manner.

The lectures are illustrated by a large number of accurate and beautiful slides, made from photographs of subjects supplied by some of the ablest men in the profession, thrown on the screen by the finest stereopticon (Bausch & Lomb) possible to procure, and are presented in a manner sure to please and instruct the average audience.

The co-operation of every dentist within the territory mentioned, who is interested in the great cause of popular education, is most earnestly invited.

In reply to many questions as to the expense, necessary arrangements and other particulars, we have formulated the following:

Things That We Will Do.

We supply the lecturer, the lecture, the lantern and the slides.

We supply press notices and cuts for advertising the lectures in local newspapers.

We supply circulars and tickets for distribution to school children, parents and others, advertising the lectures and creating popular interest.

We pay our lecturer for his services and all of his expenses, including his hotel bills. No part of this expense is asked from dentists, nor will any be accepted.

Things For Dentists to Do.

Form a local organization, including as many dentists as possible, and appoint a small committee to look after the part of the work that we cannot do. Do this at once.

The purpose of this committee is to make all necessary arrangements.

Get co-operation of school board.

Arrange approximate date.

Secure and pay rent of hall.

Arrange to have teachers distribute printing and tickets among their pupils. These tickets are free, of course, and admit the entire family. Establish a few centers where tickets may be obtained.

Arrange for use of electric current and have proper connection made.

See that lecture is well advertised in local papers and announced by teachers daily until date of lecture.

See that no dentist makes himself prominent in the work, assumes credit, or secures any personal advertising.

Furnish man to assist our lecturer, operate lantern, etc., at time of lecture.

Furnish a table not less than 24x42 inches in size and 3 ft. 6 in. high.

As soon as committee is appointed and at least part of the work is done, write us, giving us:—

Name of chairman of committee.

Size of the hall.

Seating capacity of hall.

Number of pupils in the public schools.

Kind of electric current, whether direct or alternating. State whether current is available in daytime.

When lecture is wanted, giving approximate date.

The Ransom & Randolph Co. is not to be referred to nor connected with these lectures in any manner. When necessary to explain their origin, say they are backed by a magazine called The Dental Summary.

As soon as we hear from local committees we will complete arrangements and proceed with our part of the work.

Now—all together, for the common good. Address

Educational Bureau,
The Dental Summary,
Toledo, Ohio.

NEWS and OPINIONS

Dentists and the Lecture Field.

Since the last issue of The Summary so many calls have reached us for the services of our lecturer that there can be no doubt of the popularity of this department of the movement for popular education.

Wherever Dr. Dowd has appeared he has been greeted by crowded houses, made up of both adults and children, and his talks have been received with close attention; while the dentists in the various places have not been slow to express their approval and satisfaction.

Gratifying as this may be, one fact has forced itself upon our attention with ever-increasing force: Dr. Dowd cannot meet half the demands; the work demands volunteers everywhere, men who are willing to fit themselves for platform work.

We believe that there is, in every community, at least one dentist fitted by nature and in part by education, to take up the lecture work in his particular field; the rest of the needed education is not difficult.

The Summary is in possession of material sufficient for any number of lectures; it is in position to supply slides for illustrating them; will furnish newspaper notices, and lend its aid in every way to all who are willing to take up this most important work in their own particular locality.

To those who are unfamiliar with public speaking, we suggest a beginning something like this:

Write to The Summary, stating that you are willing to engage in the work.

Ask us to submit suggestions for lectures and slides for illustrating them.

Make yourself familiar with the material furnished.

Arrange to buy or rent a lantern.

When you are ready, make arrangements with school boards in the smaller towns, or with the trustees in rural districts, to give your talk in school houses, before parents and children.

If preferred, we will supply complete lectures in manuscript or print, at our option, that may be read. Reading is easier than talking for most beginners in public work.

By the time you have delivered your lecture before several small audiences in succession, you will find yourself willing and able to appear creditably before larger ones. Once the ice is broken, no work is more fascinating and agreeable.

Well, things are being done. This is a call for volunteers who are willing to spread the glad tidings of Oral and Dental Hygiene. Who's next?

Which Are You?

The greatest hindrance to advancement in the present age is lack of individuality. The world is full of imitations and imitators; and the world is full of failures. Nearly all the failures in the world, failures even as measured by our false, foolish and superficial standards of failure and success, are due to lack of individuality. You cannot make a more serious failure than that of not being yourself. Even though, because of gaining wealth, or fame or some other possession which the world almost invariably misprizes, we call a man a supreme success, yet, if he has failed to be himself, he is a colossal failure. Success consists in doing our best in the place for which Nature has prepared us—doing it in our own way.

Every man who seeks to be something and do something worthy in the world should cut out the couplet that follows and paste it in his hat. It is the keynote of Burton's Kasidah, and one of the most inspiring bits of real poetry ever written:

"Do what thy manhood bids thee do;
    from none but self expect applause.
He noblest lives and noblest dies who
    makes and keeps his self-made laws.
All other life is living death; a world
    where only phantoms dwell;
A voice, a sound, a wind, a breath; a
    tinkling of the camel bell."

Marriages.

January 14—Dr. Frank T. Long, Escanaba, Mich., and Miss Ethel E. Gordon, of Vancouver, B. C.

Houston (Texas) Dental Association elected the following officers: Dr. M. J. Lossing, president; Dr. R. R. Ratcliff, vice president, and T. W. Dee, secretary and treasurer.

Dentists Ask Interchange of Licenses Among States.

At the annual installation of officers of the St. Louis Dental Society January 11, the principal subject of discussion was the suggestion that an amendment be offered to the state dental laws, allowing an interchange of dentists' licenses between states. At present an examination by the State Dental Board must be passed by a dentist going to another state to practice. It is expected that the St. Louis Society, with the co-operation of the state society, will present a bill for the change at the next session of the legislature.

Dr. C. H. Manhard declared some dentists, after a practice of twenty-five years, become somewhat rusty in the theory of dentistry and might fail if forced to take an examination in which they had to make an average of 75.

Officers were installed as follows: C. C. Cowdery, president; H. F. B'Oench, vice president; J. D. White, librarian; George B. Winter, secretary, and Otto Fruth, treasurer. Dr. H. N. Voorhies, dental surgeon at Jefferson Barracks, read a paper on "The Army Dentist."

Dean of St. Louis Dentists Receives Loving Cup.

A cut glass loving cup was presented to Dr. Daniel O. M. Le Cron, the oldest dental practitioner in St. Louis, at the annual banquet of the St. Louis Society of Dental Science given in his honor at Hotel Jefferson, January 18. Dr. Clarence O. Simpson, president of the society, presided as toastmaster. About twenty-five members attended.

Dr. Burton Lee Thorpe, president of the National Dental Association, made the presentation.

The next regular meeting of the Michigan State Board of Dental Examiners for the examination of applicants for registration will be held at Ann Arbor, beginning Monday, June 20th, and continuing through the 25th. Applications must be in the hands of the secretary at least fourteen days before the examination, and should be addressed to

A. W. HAIDLE, Negaunee, Mich.

DENTIST FOUND DEAD IN ROAD:—A special to the Savannah Press from Statesboro, Ga., states that Dr. J. T. Hendricks, aged 60 years and a well known dentist, was found dead in the road several miles west of that place January 7. He started home in the afternoon of January 6 and falling from his buggy when it ran over a stump sustained fatal injuries.

STATE DENTAL EXAMINATIONS:—Pennsylvania, 40 applicants, 26 successful.

Oklahoma: 24 applicants, 21 successful.

Recent Patents Relating to Dentistry.

938937—Barber chair attachment, T. G. Aitken, Deming, N. Mexico.

938640—Dental instrument. E. L. Chott, Chicago, Ill.

939189—Package roll for metallic leaf, W. H. Coe, Providence, R. I.

938525—Electric mouth mirror, B. E. Turney, Bridgeport, Conn.

939655—Headrest, J. A. and J. P. Barker, Philadelphia, Pa.

939476—Dental inlay holder, B. F. Copp, Las Cruces, New Mexico.

939834—Dental tooth clamp, G. A. Harper, Shreveport, La.

939261—Machine for contouring crown matrices, F. O. Jaques, Jr., Cranston, R. I.

939365—Dental instrument sharpener, C. Wiethoff, Minneapolis, Minn.

940599—Making artificial teeth, J. Humphrey, Boston, Mass.

940351—Dental instrument, O. Neugebauer, Berlin, Germany.

940058—Dental instrument, S. Quigley, Fitchburg, Mass.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

The Odontological Society of Western Pennsylvania will hold its 29th annual meeting at the Monongahela House, Pittsburg, Pa., April 12th and 13th. The program includes papers by Dr. J. Leon Williams, of London, England; Dr. J. P. Buckley, of Chicago, and others. A large list of clinics is being prepared and the "biggest ever" meeting is expected. A large hall is reserved for exhibitors and many new and interesting exhibits will be shown. Space may be reserved by application to Dr. W. W. Booth, Carnegie, Pa. All ethical dentists are invited to attend this meeting and join the Society. For information address: Program Committee: Dr. C. E. Peters, Fulton Bldg., Pittsburg, Pa.; Dr. J. H. Crawford, Diamond Bank Bldg., Pittsburg, Pa. Exhibit Committee: Dr. W. W. Booth, Carnegie, Pa. Membership Committee: Dr. Jno. F. Biddle, Arch St. N. S., Pittsburg, Pa.

St. Joseph County (Ind.) Dental Society elected the following officers: Dr. F. G. Conklin, president; E. I. Beistle, vice president; Dr. Fred McCallam, secretary; Dr. S. I. Best, treasurer.

Toothache Cost Dentist His Entire Outfit:—Dr. Henry Kaulbach, a dentist, of Flushing, N. Y., desires to get a certain stranger who appeared in his office January 20 securely fastened down in his dentist's chair and with his mouth stretched wide. That is all Dr. Kaulbach wants and this is why:

At about 5 o'clock the stranger, with his face bandaged, appeared in the dentist's office in the Dever Building, Main street, Flushing and asked that Dr. Kaulbach try to lessen the pain of a toothache. The doctor seated his visitor in the chair and was about to peer into the afflicted mouth when the telephone bell rang. It was an urgent call from a suffering woman from a house several blocks away and Dr. Kaulbach was asked to come immediately. Dr. Kaulbach asked the patient in the chair to wait for him, to which the stranger courteously agreed.

Dr. Kaulbach was absent about half an hour. When he returned his office was pretty nearly as bare as Mother Hubbard's cupboard. There was not an instrument left. Everything that could be carried away handily had been taken, and about $500 worth of gold and silver.

More Reciprocity:—Since our report in the February Summary Kansas has arranged exchange of license with two additional states, New Jersey and Illinois.

With a bullet from a 22-calibre revolver lodged under his left knee cap, Dr. Walter Mathews, the well known Lexington, Ky., dentist, is confined to his bed and will probably have to undergo an operation. Dr. Mathews was accidentally shot January 14 at his home while examining the revolver. The ball entered his left leg about three inches above the knee and ploughed its way through the flesh, lodging under the knee cap.

Rhode Island Dental Board:—Governor Pothier has sent to the senate the reappointment of Albert L. Midgeley for three years as a member of the state dental board.

W. G. Ebersole Convalescent:—We are pleased to announce that Dr. W. G. Ebersole, Cleveland, who was operated on for appendicitis several weeks ago, is now convalescent.

Minnesota Dental Board:—Dr. F. E. Cobb, of Minneapolis, has been appointed a member of the state board of dental examiners by Governor Eberhart. He succeeds Dr. J. W. Penberthy, of Minneapolis, resigned. Dr. Cobb is also secretary of the board.

Deaths.

Jan. 1—Dr. John Drury, Denver, Colo., of apoplexy; aged 58 years.

Jan. 5—Dr. W. K. Christian, Moberly, Mo., of pneumonia; aged 73 years.

Jan. 9—Dr. M. B. Wilson, Bangor, Pa., of paralysis; aged 84 years.

Jan. 10—Dr. Lewis J. Kerwin, Cupertino, Cal.; aged 39 years.

Jan. 13—Dr. Alphonse Peyroux, Jr., Bay St. Louis, La.; aged 36 years.

Jan. 15—Dr. Alfred W. Viney, New York, N. Y., of pneumonia; aged 32 years.

Jan. 17—Dr. Geo. J. Hornung, Jersey City, N. J.; aged 44 years.

Jan. 18—Dr. Nathan F. Hamilton, Richford, Vt., of blood poisoning; aged 65 years.

Jan. 22—W. B. Ludlow, Cincinnati, O.; aged 82. He was the oldest dentist in that city.

Jan. 23—Dr. A. H. Rainey, Centralia, Ill.; aged 55.

Jan. 7—Dr. J. T. Hendricks, Savannah, Ga.; aged 60.

Oct. 14—Dr. Isaac Douglas, Romeo, Mich.; 79 years of age.

Jan. 24—Dr. Thos. Sturgis, Bluffton, Ind.; aged 68 years.

Robberies.

Dec. 31—Dr. F. T. Snow, San Jose, Cald., $40 worth of gold leaf.

Jan. 10—New Orleans, La.: Dr. St. Clair Duke, gold crowns worth $30; Dr. Joseph J. Cappell, gold crowns worth $70; Dr. C. Edward Kells, Jr., $6 in currency, $10 worth of stamps and gold crowns worth $50; Dr. Geo. T. Bienvennue, gold bridges and fillings worth $35; Dr. J. H. Laudry, gold crowns worth $30; Dr. Wallace Woods, gold rings and fillings valued at $135; Dr. F P. Wolffe, gold crowns, $20; Drs. J. M. and J. E. Woodward, gold fillings, $50; Dr. C. E. Vignes, postage stamps.

Jan. 15—Drs. F. N. Morgan and C. A. Johnson, Milwaukee, Wis., quantity of gold and false teeth.

Jan. 20—Dr. Raymond M. Kaulbach, Flushing, N. Y., $300 worth of fillings, leaf gold and dental instruments.

Jan. 19—Dr. C. A. Jacobi, San Antonio, Texas, $1,000 worth of gold and supplies.

Jan. 18—Dr. J. D. Lord, Little Rock, Ark., loss $135.

Dr. H. C. Gleason, a dentist of Ocean Park, is in the hospital, blind from the effects of the discharge of an ammonia gun in the hands of a robber whom the doctor encountered in his office. Surgeons hope to save Gleason's eyesight.

Abolishing the Public Drinking Cup Nuisance.

The Cleveland Anti-Tuberculosis League, which has for several weeks conducted a public exhibit showing the methods by which tuberculosis is spread, has declared war on the public drinking cup. The League intends to see that the common drinking cup in parks, schools and railway trains and stations is abolished.

Dr. R. H. Bishop, Jr., Secretary of the League, has been authorized by the board of directors to place small vending machines of individual paper cups around in public places under the care of the League. The authorities declare that the public cup is one of the most frequent means of spreading tuberculosis, diphtheria and a dozen other diseases.

Last Fall the Service Board in Dayton abolished the drinking cup in parks. Dr. R. O. Probst, Executive Officer of the State Board of Health, is carrying on a campaign through the state to the end of prohibiting the common drinking cup by law as Michigan did on January 1st.

Walk! Walk!

One of the strongest points of walking as an exercise is that it keeps the body in splendid condition to meet any unusual stress or strain which it may be called upon to withstand. Then, too, walking seems to effect a general tuning up of the entire system, which enables the athlete or gymnast to perform his favorite feats of strength, even when circumstances are such as to make it impossible for him to keep in constant practice. Do not ride unless compelled to do so by haste or inclement weather. —*Physical Culture.*

Mrs. Jonathan Taft Dead:—Mrs. Jonathan Taft, widow of the late Prof. Jonathan Taft, died at the University hospital, Ann Arbor, Thursday, January 10, 1910. Her husband was a dean in the dental department and was one of its founders.

Dr. E. L. Southworth, second vice president of the Fort Sutter National Bank, of Sacramento, who is a dentist and has practiced his profession in that city for many years, on the 1st of February, went into active service in the banking business by assuming charge of the credit department of the Fort Sutter National Bank. He will discontinue dentistry and devote his entire time to his new duties.

A judge in one of the southern cities is endeavoring to eradicate the free use of knives and pistols in fights. When two dentists of his city were recently brought before him, charged with assault and battery, he learned that the fight was of a fistic order and that the men were unwilling to prosecute one another. He dismissed them.

"I commend you men," said the judge, "on the method you took to settle your troubles. A great many men of your standing are of the opinion that the only high-class method of fighting is to shoot, but this is a mistake. Keep your pistols out of your pockets; you will be glad of it."

One Cause of Race Suicide.

The alarming decrease in the number of children to a family, or as a distinguished statesman terms it, "race suicide," is another explanation of how the great middle-class salaried families have been meeting the increased cost and growing standard of living. Every additional child in a family means additional expense (to the wage earner the third child usually means a close approach to the poverty line), and it is plain that unless this cost is forthcoming through a higher salary, then the standard of living of the other members of the family must be lowered to provide for the newcomer. There is a point to the salaried family where this lowering process must stop, and sensibly the wife and husband have agreed to limit the number of children before that point is reached. They do not desire that the quantity shall lower the quality. That is why the average middle-class family nowadays has only two or three children instead of the eight, ten or twelve of their parents and grandparents.—Frank Julian Warne, Ph. D., in *Good Housekeeping Magazine.*

Was Dr. Cook Self-Deluded?

Whether or not Dr. Cook ever reached the North Pole, a question upon which the civilized world has had honest differences of opinion from the time of the announcement of his claim, there can, it seems, be no final difference on the question of the genuineness of the explorer's own belief that he had been there. Every competent observer who met him personally has maintained that he is quite incapable, morally or intellectually, of concocting a colossal scheme to hocus the entire world. Throughout the whole affair there is no evidence of any plan to impose on the credulity of mankind. It seems probable that Dr. Cook actually attained a very high northern latitude, perhaps came within a shorter distance of the North Pole than he will ever be credited for. It is sincerely to be regretted that he did not, upon his return to civilization, frankly state his actual achievement. This was probably in itself noteworthy enough to entitle him to honor and financial return, sufficient, perhaps, to compensate him for the privations he underwent. It may be that his lonely imprisonment during the six months' Arctic night after his return from his farthest north affected his memory and judgment. Throughout the whole discussion the attitude and conduct of the University of Copenhagen and the Danish people have been worthy of sincere respect and admiration. They accepted with dignified enthusiasm and at its face value the claim of an American explorer against whose record they had no suspicion. All through the trying period of discussion, so often bitter and unfair, they maintained the dignified reserve that properly characterizes all sincere and honest folk while awaiting a decision. But when the necessary evidence was not produced they did not permit their desire or their preceding action to prevent a decision in strict accord with scientific truth.—From ''The Progress of the World,'' in the *American Review of Reviews.*

Enough Said.

Not long ago a Toledo clergyman was called upon to conduct the services at the funeral of a man with whom he had had no acquaintance. So, thinking to glean a useful hint or two touching the deceased's character, when he was shown into the living-room the divine called a little boy of eight, evidently a member of the family, and put to him this question:

''Can you tell me what were the last words of your father?''

''He didn't have any,'' responded the lad, with the utmost naivette. ''Ma was with him to the last.''—*Lippincott's.*

Japanese Progress.

Japan is making rapid strides along many industrial lines and great attention has for many years been paid to her agriculture in which rapid progress is being made. As early as 1872 she had established an agricultural college. For several years the soil survey of the main islands has been completed with large scale maps and is made the basis of values for national, perfectural and local land taxes. She has an admirable system of road maintenance in effective operation. She has many agricultural experiment stations, nine of which we visited, and the equipment at Tokio for soil investigation is superior to anything yet provided in this country. We have more pretentious buildings, but their resources are more largely used in providing appliances and men for rigid, accurate research work. I visited one of their dormitories at the agricultural college connected with the Fukuoka Experiment Station, and here young men are provided with room and board at four dollars (gold) per month. From the two colleges of highest rank they had graduated, in 1907, 1,041 students; from their one hundred and thirty-nine A and B classes of agricultural schools of second rank they had graduated in 1906, 12,371, and from the still lower grade of third rank there graduated in 1905, from the 2,450 supplementary agricultural schools, 14,927.—*Farm and Fireside.*

Bound to Recover.

Patient—''Tell me candidly, Doc, do you think I'll pull through?''

Doctor—''Oh, you're bound to get well—you can't help yourself. The *Medical Record* shows that out of one hundred cases like yours, one per cent. invariably recovers. I've treated ninety-nine cases, and every one of them died. Why, man, alive, you can't die if you try! There's no humbug in statistics.'' —*Lippincott's.*

No Reason for Alarm.

One word in conclusion on a troublesome point about which we physicians have to worry a great deal and the public still more. One often hears the statement: ''All this fuss about tuberculosis is terrible for the poor victims who are made social outcasts, to their great distress and to the alarm of their families.'' There is no justification for this feeling.

There is no risk in close contact with tuberculosis if the patient is ordinarily careful about the sputum. If one is morbidly afraid of the disease and desires a place of safety where one can get away from its germs, go to some first-class sanatorium for tuberculosis. There are fewer germs there in the air and on the floor than in any other place in the country, and there is very little risk of catching the disease in the house of a tuberculous patient if he takes good care of the sputum, and sees that it is properly disinfected.—*Dr. William Osler in Woman's Home Companion.*

Census Taker—''Give the ages of your five children.''

Father—''All right. Mary will be thirteen in September—thirteen, yes, that must be right; and John is—John—ahem —he's going on eleven, I guess; then Helen—wait a minute, I never could remember how old she is—but Fred is—Fred is—let me see—and Archie—heavens, man, my wife will be back at half-past five—can't you come again then?''—*Woman's Home Companion.*

Letters We Like.

CHARLOTTE, N. C.

THE DENTAL SUMMARY:—Herewith I enclose you articles I have had published in two of our papers. A daily of 8,000 circulation, "The Mouth a Poison Factory," and in the "*Christian Home*," a weekly of 4,000 circulation, "How Nature's Work Is Delayed by Neglect." These papers have promised to keep the good work up, the daily 3 or 4 times each month and the weekly one per month. Also I send you clipping from a nearby country paper of 2,000 circulation which accidentally fell into my hands today, which copied the article from the Charlotte *News*. We can't tell how many more did the same. Will return the cuts later and let you hear from me again. Yours truly,

C. M. BEAM.

PASADENA, CAL., Jan. 26.

THE DENTAL SUMMARY:—At a recent meeting of our Pasadena Dental Society Dr. Dr. H. B. Stonebrook read a communication from you in regard to the education of the public in the care of the teeth, and presented the following resolution which was adopted by the society.

"I move that it be the sense of this society that we recognize and heartily approve the efforts of the Literary Bureau of THE DENTAL SUMMARY in its campaign of education of the public in the care of the teeth."

I will add that our publicity committee has arranged with one and probably both of our local papers to publish your Educational Bulletin. Yours truly,

A. B. ALLEN, *Secy.*

Splendid Work of a Popular Magazine.

When *The Delineator* more than two years ago announced that it was going to find homes for parentless children, people laughed and made light of the idea. Those who scoffed at first are now applauding. It is now proved that a great popular magazine can successfully reach out and find doors that will swing open to the child who has neither father nor mother.

The work that *The Delineator* is doing in this regard is as wide as the nation. Never a month goes by that it does not make three hearts in one home happy in a dozen different states. It is a good editorial shepherd.

Its plan is very simple. It finds children who have not where to lay their heads save in an institutional home, and then through its columns tells of these children. Letters pour in asking further information, and when a desirable place is found the child is given over.

A good example of this is found in that magazine for March. Here is the description of a boy who has no home:

"Sunny Jim earned his name by smiling upon a world in which he is classified as 'destitute, homeless and abandoned.' His father was a farmer, so shiftless that the little family of five children was often in need. Sunny Jim's mother labored so hard against such hopeless odds that she died, leaving her children in poverty. Then Sunny Jim's father deserted the helpless little ones. The Illinois Children's Home and Aid Society took charge of the abandoned family. In the receiving home Sunny Jim was so patient and unselfish that the mother of one of the workers took him to her own house, where he is waiting for a foster-father and a foster-mother.

"Sunny Jim is of American parentage. He is eight years old, a healthy, active little fellow. He has a fair complexion, blue eyes and light hair. His features are regular. He has been to school where he made good progress. Obedient, honest and industrious, he is 'just a normal boy,' according to the report of his caretakers, who have written the comment: 'Manly and lovable, bright and very desirable—a deserving promising lad.' Sunny Jim will be an affectionate son who will amply repay all that he costs. He must find a home in Illinois. For further information address Child-Rescue Department, care of *The Delineator*.

Some of the Wonders of the New Telepost System of Telegraphing.

The communicating or transmission of language to a distance is of very remote origin. The word "telegraphy," strictly defined, means "writing afar off." As practiced today, however, it has a wider and broader meaning, signifying the sending of messages to a distance by any means excepting speech.

It has long been recognized by experts and scientists that a practical system of machine telegraphy was necessary to meet the increased demand for rapid telegraphy. After many years of patient study and arduous labor this has been accomplished by the veteran inventor and worker in the field of telegraphy, Mr. Patrick B, Delany.

A new telegraph company, the Telepost, about a year ago introduced this Delany rapid system, by which from 1,000 to 2,000 words per minute are being transmitted over one wire every day commercially, with perfect ease and accuracy.

This system may be properly called "machine telegraphy," as most of its operations are either electromechanical or electrochemical or both.

In the ordinary system of telegraphy the speed of transmission is governed by the ability of the operator to manipulate the key, while in the Telepost system the limit so far has never been reached, although a speed of 8,000 words per minute over an experimental line has been accomplished.—*St. Nicholas.*

Eating Less and Talking More While You Eat.

In the department of "The Pilgrim's Scrip" in the March *American Magazine*, the following letter is published:

"I was interested in your article called 'Some Dangers From High Prices.' It is true that simple food costs a lot of money today. I have just returned home from a family gathering where there were gathered together representatives from various states and cities and towns. It seems to me that nothing was so marked in the family talk as the various reports on the cost of living. Butter and eggs and meat and other things have gone up and up everywhere. The small town is no better off (relatively) than the city. There is no use in telling the city people to rush to the country. As the thing stands now there is no relief in that direction.

"Now, I am not going to suggest that anybody should do what I do. All that I intend is to give you my own experience and let it go at that. Here it is.

"A number of years ago (I live in Chicago) my wife and I agreed to eat less and talk more at the table. Talk is less expensive than food. And, curiously enough, we have found that by doing this we can get along, at least for the present. We chew what we eat slowly and seem to get as much nourishment out of a smaller amount of food as we used to out of a larger. You would like me to be more specific? Well, I will. Take the matter of eggs. At breakfast we have them often. The point is that we each have one, whereas ten years ago we each had two. And I give you my word I do not now see any difference between eating one egg and two.

"Of course I know that this, in a measure, is the teaching of Fletcher. I am not a 'Fletcherite,' however. I am merely an ordinary person trying to adjust myself to the rapidly increasing price of food. In so doing I am conscious of only one thing—an overwhelming desire to make the best of things as they are and to continue happy and contented. This does not mean that I do not feel that things are wrong. I do. If I didn't, I should not take the trouble to speak up in a discussion which I hope you will keep up."

Life In Africa.

The habits of the African are very simple, and therefore afford excellent opportunity for studying the effects of the various factors which make up his life. How simple his life is the following description admirably indicates: "Here in his virgin simplicity dwells man, without clothes, without civilization, without learning, without religion—the genuine child of nature, thoughtless, careless, and contented. This man is apparently quite happy; he has practically no wants. One stick, pointed, makes him a spear; two sticks, rubbed together, make him a fire; fifty sticks, tied together, make him a house. The bark he peels from them makes his clothes; the fruits which hang on them form his food." With modifications to suit particular tribes, this description is essentially true of the African as we find him throughout the central part of the continent today.—*Physical Culture.*

Dr. Bishop, Dentist to "Unser Fritz," Dies.

Dr. Henry F. Bishop, who at one time shared with Dr. Evans, of Philadelphia, the honors of being the most celebrated dentists in Europe, died of the effects of age recently in the home of his daughter. Mrs. J. E. V. Chalmers, at No. 332 East Eighty-eighth street, New York. He was ninety years old.

At the same time that Dr. Evans was having as his patients in Paris the royalty and leading officials of the French government, Dr. Bishop was caring for the teeth of Emperor Frederick III. For years he had the title of court dentist. and after he retired and returned to this country he often told his friends of the incident of the days when he filled the molars for "Unser Fritz" and the latter's family, including the present Emperor William.

Dr. Bishop was born in Lisbon, Conn., in 1820, and after he was graduated from Massachusetts Dental College he practiced several years in Worcester, Mass., and then went to Germany. There his skill soon gained the attention of the Emperor and for years the American dentist was "the only person in the world who could pain 'Unser Fritz' with impunity," as the dentist often was told by the Prussian King.

Until he was eighty-five years old Dr. Bishop went on a hunting trip annually and seldom failed to walk twenty miles for exercise. He retired from practice in Germany twenty-five years ago. He published a history of the Bishop family. Dr. Bishop wrote a "Half Hour's Autobiography," which was published in THE DENTAL SUMMARY November, 1909.

Dentists Will Hold International Meeting.

At the last regular meeting of the San Francisco Dental Association steps were taken to hold an international dental congress in that city during the Panama-Pacific Exposition. Resolutions were unanimously adopted, setting forth that it was fitting and proper for members of the dental profession throughout the world to meet in an international convention at that time for the purpose of interchanging ideas and exhibiting methods and appliances relating to the advancement of the profession and practice of dentistry, and the relief and prevention of human suffering.

Dr. W. A. L. Knowles was appointed chairman of a committee of five to bring the matter to the attention of the profession throughout the world so as to secure as large, as cosmopolitan, and as representative an attendance as possible. The remainder of the committee will be appointed by the president.

Fires.

Dr. J. Disnuke's office, Mayfield, Ky., damaged $200 by fire January 25.

Silicate Cements.

What is the attitude of the individual dentist toward these materials today?

From the beginning, clinical reports have varied considerably, as some state they have nearly perfect results, while others have had a large proportion of radical failures.

At first it was difficult to believe that a skillful class of men could use the same kind of materials with such contrasts in results.

A few years' experience explains the causes of such decided variations.

One of the first facts to be demonstrated, was that the different silicate cements did not give equally good results. Later this was emphasized by several of these cements being withdrawn from sale.

The dental profession in this country has had about five years to observe and decide upon the merits of modern silicate cements, and improve methods of manipulation.

We would be better informed today as to the real value of silicate cements if results as reported had also *definitely stated which one and by what method it had been used.*

The November and December, 1909 Dental Summary contributions are improvements in this respect.

More details along these lines will enable us to compare materials, methods and operative skill, and form a more intelligent opinion on the subject. Most of the unfavorable reports given in The Summary did not refer to Ascher's Artificial Enamel, but to other silicate cements that had failed generally. Others stated that their experiences were too limited to give intelligent opinions.

The most favorable reports mention Ascher's Artificial Enamel as the material used.

A dentist told the writer that he had refilled many cavities that another dentist had filled with Ascher's Artificial Enamel. The facts were that another silicate cement had been used as the dentist had never even tried Ascher's Artificial Enamel.

Failures of silicate fillings should not be attributed to Ascher's Artificial Enamel unless it is positively known to have been used. The weaker members of the silicate group must have caused a great many failures, and to consider all such as Ascher fillings would be rank injustice as well as prejudice the observer.

One manufacturer, who has failed to produce a satisfactory silicate cement has presumed to dictate how Ascher's Artificial Enamel should be worked.

So many conflicting articles, reports and clinics have been given that they should be considered as representing individual preferences only, except when in harmony with instructions issued by The Pinches Dental Manufacturing Company.

FIVE YEARS' TRIAL

Ascher's Artificial Enamel is practically the only one that has survived the five years' trial in this country, and a medal was awarded it at the last International Dental Congress, after six years' use in Europe.

The material had been before the profession about one year abroad when it was introduced here.

At that time but one method of inserting and finishing fillings had been developed, and instructions explaining that method accompanied the material.

ORIGINAL METHOD

The method consisted of four essential features, viz.. 1, a soft plastic mix that would flow easily under pressure; 2, vaseline or some oil; 3, celluloid strip; 4, filling shaped and completely finished by burnishing.

The cavity was filled to excess, which was then covered with the oiled strip, and immediately pressure was applied to shape filling, followed by a burnishing

CONTENTS

REGULAR CONTRIBUTIONS.

The Contact Point ... E. S. PACKWOOD ... 303
Mechanical Procedure as a Prophylactic Measure in Caries ... THOS. E. WEEKS ... 312
Casting Pure Aluminum Base-Plate ... GEO. H. WILSON ... 320
Abnormalities of Superior Maxilla Influencing Mal-Occlusion, etc. ... EDWARD J. BERNSTEIN ... 327
Wiring and Reswaging a Gold Plate ... C. E. TALBERT ... 339
Rapid Cutting of Dentine and Enamel With Carborundum Powder ... H. T. SMITH ... 340
Recovering Gold From Filings ... D. W. BARKER ... 341
Simple Method of Making Gold Backing for Steele Facing ... DRS. SIMPSON & BALLOU ... 342
A Short Cut in Rubber Repairs ... M. B. YEOMAN ... 342
Useful Hints ... A. P. KILBOURNE ... 343
How to Make Porte Polisher for Holding Orangewood Points ... R. L. HESSER ... 343
A Study of Malnutrition in the School Child ... E. MATHER SILL ... 344
Report of Committee on Dental Science and Literature ... G. C. BOWLES ... 350
Report on Dental Science and Literature ... H. E. STRAIN ... 354
A Base for a Richmond Crown ... JAMES E. BOYD ... 358
Indexing and Classifying Dental Literature ... CHAS. SHEPARD FULLER ... 359
Grinding Gum Sections ... J. O. HAWKINS ... 361
Constitutional Treatment of Dental Diseases ... W. H. O. McGEHEE ... 364
President's Address ... H. J. FELTUS ... 367
A Sermon on Saliva ... H. C. SEXTON ... 370

THE SUCCESSFUL DENTIST

Winning Patronage ... C. N. JOHNSON ... 383
A Disclaimer and a Warning ... 388

EDITORIAL

Orthodontics Instead of Orthodontia ... 390
The Difference ... 391
Offensive Breath ... 392
Launching of National Campaign for Oral Hygiene ... 392
Society Announcements ... 391, 393
News and Opinion ...

To Correspondents: Send communications, exchanges, books for review, etc., intended for the Editor of Dental Summary, to Dr. L. P. Bethel, 1255 Neil Ave., Columbus, Ohio. Subscriptions and advertisements, send to the publishers.

THE RANSOM & RANDOLPH CO., TOLEDO, OHIO.

[illegible]

[illegible]

[illegible]

[illegible]

Virginia State Dental Association

1910

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX APRIL, 1910 No. 4

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society

and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. BETHEL, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple
St. Louis	Dr. E. E. Haverstick, Boyle and Maryland
Kansas City	Dr. Martin Dewey, Argyle Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.
Los Angeles	Dr. B. Frank Gray, Security Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.
Detroit	Dr. F. B. Spalding, Gas Office Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Louisville	Dr. H. B. Tileston, Equitable Bldg.
Memphis	Dr. D. M. Cattell.
Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Richmond	Dr. F. W. Stiff, 600 E. Grace St.
New York City	Dr. W. H. Sieberst, 1 W. 34th St.

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, in U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

THE CONTACT POINT*

By E. S. Packwood, D. D. S., Buffalo, N. Y.

TODAY science is advancing very rapidly in all its various departments, and while many of our most lauded discoveries are found to have been old facts to the ancients, yet the general trend is undoubtedly forward.

In this world-movement for knowledge, dental science has held a worthy position that each year is becoming more prominent.

Any discovery, though it appeal ever so greatly to the imagination, if it is not founded on a substantial ground work of first principles; if it is not sifted down to a microscopical understanding of the subject, will not be generally accepted and take its place among the great truths until such fundamental facts are thoroughly understood. So it is with the subject for this evening.

Among the many problems presented to the dentist for solution, one that has called forth much argument and discussion is that dealing with the treatment of the approximate surfaces of the teeth to produce a healthy environment as well as to restore lost tissue and though the theories of extension of the margins to an immune area and the production of a well formed contact point have been advocated, many have dissented, and it is only with a thorough knowledge of the condition of the normal tissues both soft and hard and of their functions that the aforementioned method of restoration becomes not a theory but a self-evident truth.

---

*Read before the Eighth District Dental Society of New York, 1909.

As an interesting example of no-contact-advocacy, I would like to quote a paragraph or two from a paper by Dr. I. A. Freeman, read before the Chicago Dental Society in 1890, and entitled, "The Preparation and Filling of Proximate Cavities and Protection of Lateral and Cervical Margins." Speaking of this class of cavities, he says, "In the preparation of cavities we should so change the contour of the tooth that at no point will it come in contact with the approximate tooth." The reason given for this method of restoration is interesting. "Now, why is it that we find this cavity, or, what has caused it?" is the first question we should ask. If we examine the surface where the proximate tooth touches this one, we will find the surface is clean, smooth and burnished from the friction given in the movement of the teeth in the process of mastication; just above this point is where the line of decay is met; near this point the space is very narrow. Evidently capillary forces have held the oral secretions in this space and not being displaced, decomposition takes place and acidity is the result, the enamel is broken down by this chemical action * * * *" In the discussion that followed the reading of this paper, while there were those who did not agree with the writer in not restoring the contact point, no one suggested that the cause of decay in this case as explained, was not correct, and if so, why his method could not be utilized.

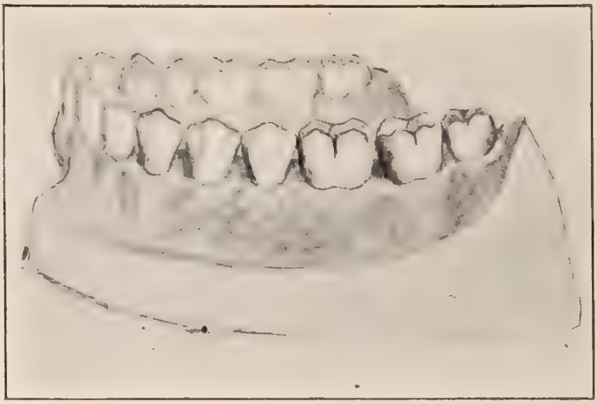


Fig. 1

THE IDEAL CONDITIONS

In a mouth containing a complete denture of the best form and arrangement, each jaw possesses thirty interproximal spaces, all forming more or less of a triangle, the sides of which consist of the approximating teeth, the base formed by the alveolar process lying between them while the apex is the point at which they come in contact and is very near the occluding margin. (See Fig. 1.) This triangle is filled with gum tissue—the interproximal gum tissue. The contact points are what the name implies—points—the surrounding tooth structure standing away in all directions. The interproximal gum rounds out both labially, buccally and lingually from the triangles. Occlusally the teeth present rounded surfaces running down to the contact points. All this description is of the visible anatomy. Below the gingival border each tooth has its springy peridental membrane that gives slightly with the lateral pressure conveyed from tooth to tooth through their contact points and brings them back to normal when the strain is removed. Still another force influencing the contact point is the pressure exerted by the opposing teeth in the other jaw. To these might be added the pressure of the lips, cheeks and tongue. All working together they form a harmonious whole and one is almost tempted to say, invulnerable whole. Such perfect conditions, alas, are not often found.

ABNORMAL CASES

Those coming under the domain of this paper may be classed as follows:

1. Defects of deciduous teeth causing irregularities in the permanent set.
2. Extraction of one or more permanent teeth.
3. Malformed proximal surfaces.
4. Recession cf interproximal gum tissue.

1. How irregularities, whether dating from the time of eruption or due to later extraction, make recesses for interproximal decay, all will understand. Teeth not in true alignment in the arch will often have approximal recesses not covered with the protecting gum tissue and forming splendid breeding grounds where the bacteria can work undisturbed.

2. After an extraction, the teeth adjacent to the one lost are forced to a greater or less extent toward each other by the lateral pressure of the whole arch in its attempt to close the space. As said before, the principal impetus to this result is the elastic pericementum while the occlusion with the teeth of the opposing jaw has a deciding influence as to the extent the space will close. Unless the tooth was extracted very early in life it would be better if the adjacent teeth could keep their original positions as their movement toward each other usually stops short of the contact, leaving a space between for the food to lodge, and also their movement is apt to disarrange the rest of the teeth in the arch, perhaps spoiling other points of contact. (Fig. 2.)

3. Malformed contact points can be grouped primarily into two classes, each class having modifications. (See Fig. 3.)

First. Those on very square or angular teeth with broad, flat sides giving a contact that is rather a surface than a point. These surfaces on adjacent teeth touch their greatest extent bucco-lingually, and when decay is found it extends in this direction.

Second. An even worse tooth formation, a thick-necked tooth, also squarely built so that the approximate surfaces practically lie in contact from the occlusal surface to the gingiva. They not only catch and hold food, but it is pushed against the gum tissue, causing the destruction of the latter and so forming a pocket in which food undergoes acid fermentation and decay speedily follows near the gingival line. Occasionally the peridental membrane is affected due to putrefactive decomposition. These two forms are descriptive of teeth never possessd of proper contact points. Another class has a mechanical reason for these flat contacts in the constant attrition of one tooth against its fellow during mastication, causing in a life time, a material flattening of these surfaces. (Fig. 4.)

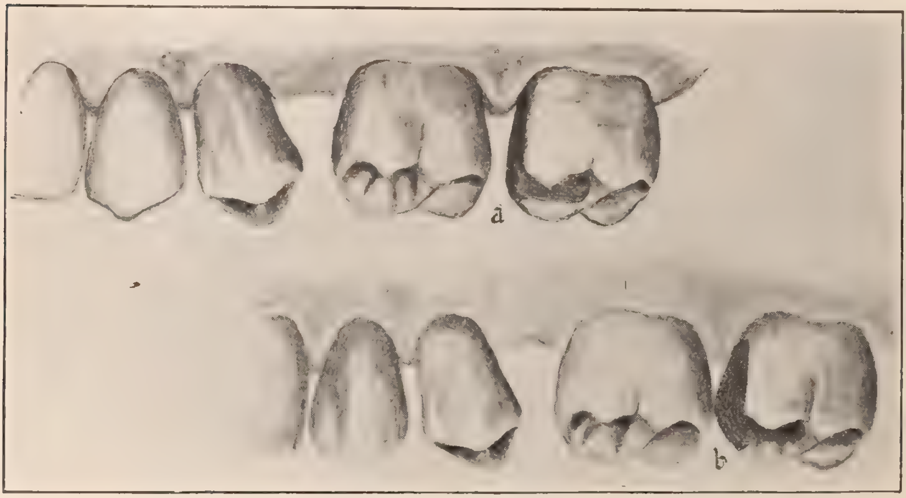


Fig. 2

4. The last named cause of proximal decay—recession of interproximal gum tissue while one of the evils accompanying old age is also very often due to one of the previous defects and produces a secondary decay lying adjacent to the gum margin. The loss of the contact points causes superficial decay and these roughened surfaces catch and hold the particles of food that now find ready access. These decomposing, cause the underlying gum tissue to recede. (Figs. 5 and 6.)

RESTORATION

In speaking of the restoration of the approximal surfaces, it is understood that all fillings will have their margins, that are not covered by gum tissue, laid in a self-cleansing area.

It requires a well-formed contour to produce a normal interproximal contact. The advantages of the latter condition are enumerated by Dr. G. V. Black as follows:

1. Conservation of healthy gum tissue.
2. To secure best conditions of cleanliness.
3. To prevent lodgment and impaction of food.
4. To allow ready cleansing of adjacent surfaces.
5. To insure in large measure the permanence of fillings.
6. To promote the comfort of the patient and satisfaction of the operator.

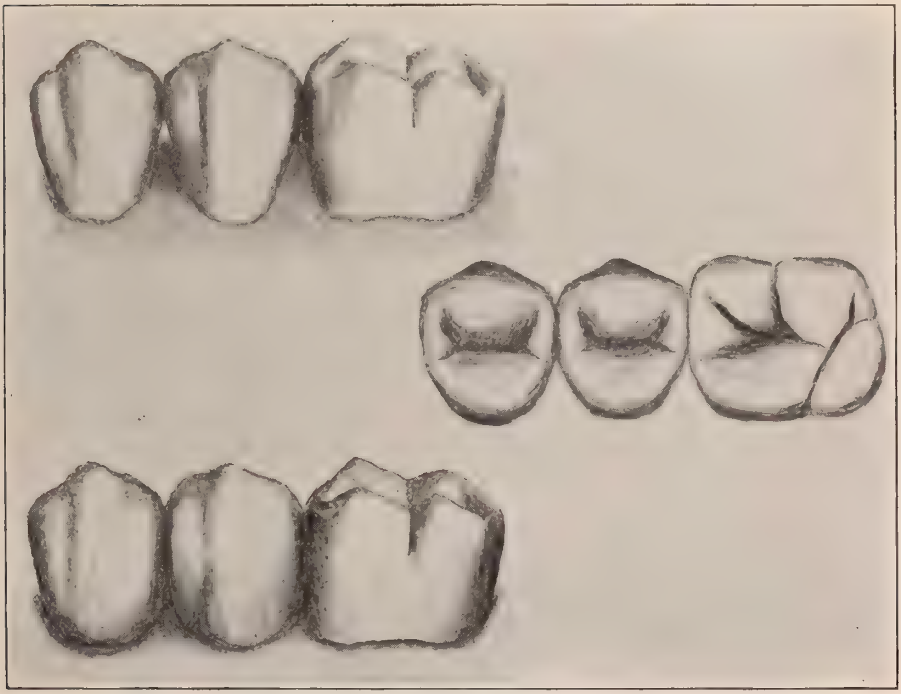


Fig. 3

Dr. Garrett Newkirk in Johnson's Operative Dentistry makes the statement that "without separation preparatory to filling, it is impossible to secure the necessary contour."

METHODS OF RESTORATION WITH ESPECIAL REFERENCE TO THE CONTACT

Those cavities, so small that they cannot be reached bucally or lingually, and usually discovered by the explorer or dental floss, should be opened occlusally, not only for access, but to properly restore the contact point. If to be filled with amalgam, the matrix should be adjusted and separation secured so that a tight contact point will be assured.

Large cavities that have been neglected for some time so that the teeth have closed approximately should first be restored to their normal positions, either by immediate separation or, if the space required is too great, by slow separation. If filled without this precaution there will be little, if any, interproximal space. (Fig. 7c.)

A little more separation in some cases of teeth possessing square proximal surfaces will allow a more prominent contact point and require less sacrifice of tooth structure to reach a self-cleansing area. (Fig. 7b.)

For quick wedging the Perry Separators are considered the best on the market, and I quote Newkirk in Johnson's Operative Dentistry when I say "for proper knuckling there is nothing to compare with the Perry Separators."

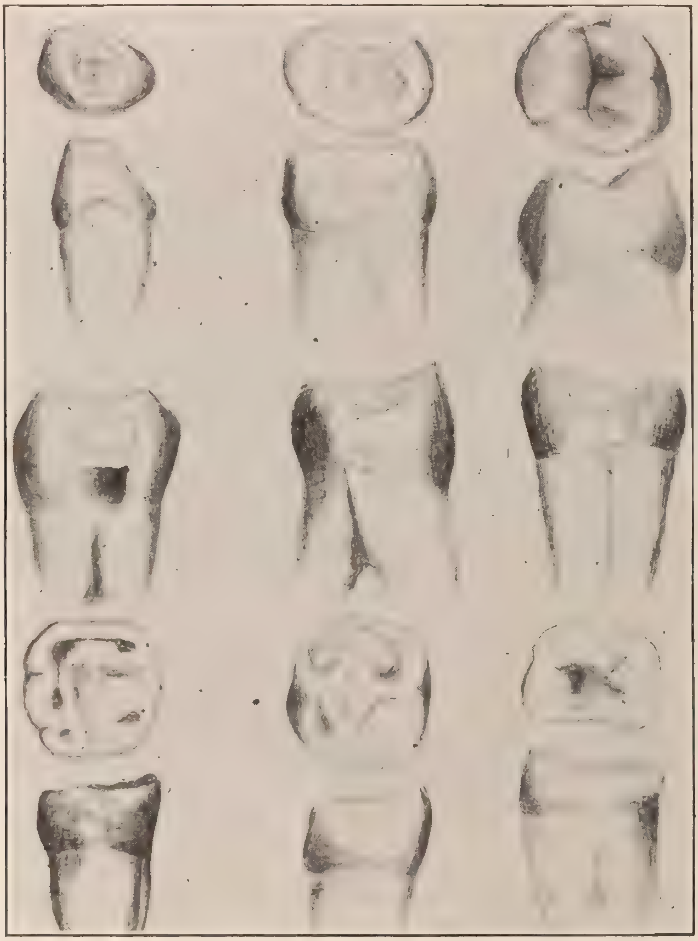


Fig. 4

Obtaining separation often causes soreness and takes time, but will not compare with the soreness caused by a flat contact or the time spent in attempting to alleviate it.

I recall a case in my first year of practice that well illustrates this fact. I filled a mesial cavity of moderate depth in a superior second molar restoring the contact point but not obtaining the separation necessary to give the tooth its original form. Pericementitis soon followed, the seat of the irritation lying in the interproximal space at the gum margin, but I could not find a cause for the inflammation. The gingival margin seemed smooth, but for want of a better explanation I worked considerably on that trying to remove any overhanging amalgam edge. The irritation grew worse until one night the patient lost patience and had it out. I obtained possession of the remains but found the gingival margin perfectly smooth and only later research and experience made me realize that a flat contact point was the primary trouble.

When, because of the loss of adjacent teeth, the remaining ones have separated and are apt to spread still further it is best not to try to restore the contact point by an extra large bell-shaped filling, for the teeth will usually continue to spread and the bowed-out proximate surface offers shelter for the lodgment of debris much more than would a flat proximate surface. (See Fig. 2a, b.) For fear of the same result the cusps of the opposing teeth should not press with sufficient force to separate those not locked in position in the arch, so making their contact points useless.

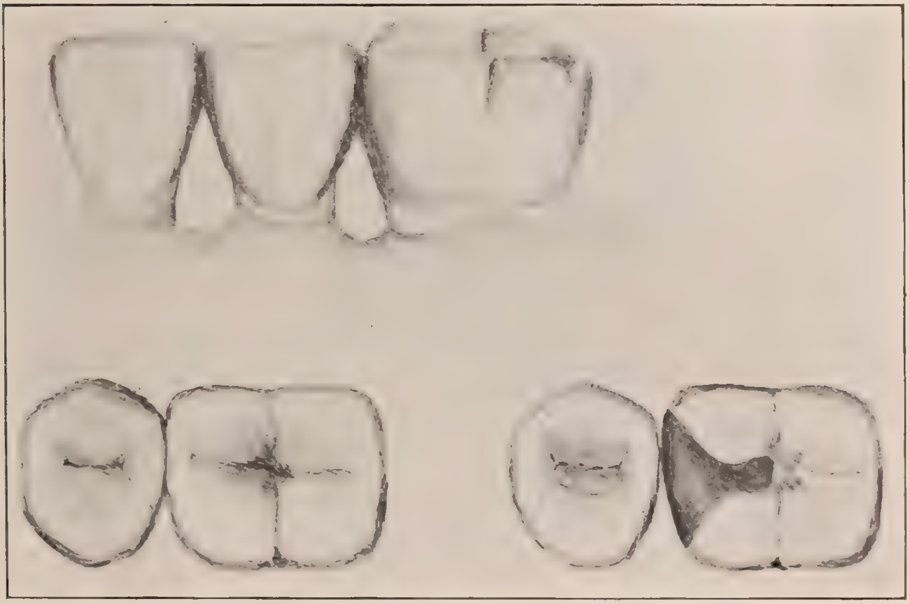


Fig. 5

An abnormal condition that often requires correction by the insertion of a filling is that of the flat contact point as yet free from decay, but causing great distress by accumulating food particles, especially of a fibrous character, in the interproximal space. An occluso-approximal cavity should be formed, separation secured and the correct contact supplied. (See Fig. 5.)

In contouring with filling material, the result aimed at should not be the restoration of the original form of the crown so much as to preserve the proper form of the interproximal space and to prevent food wedging into this area.

In a conversation with Dr. Geo. B. Snow, I found his method of restoration had been to cut away the weaker margin, buccal or lingual as the case might be, and place the renewed contact point nearer the stronger angle, thus giving a lateral V shape separation.

If the point were restored to the central position of the approximal surface, mastication would be more apt to force food along the occlusal, inner slopes of the buccal and lingual cusps and wedge it in between the teeth, whereas by having the knuckle placed either buccaly or lingually of the center, the food slips over the contact and is carried free down the sides of the teeth.

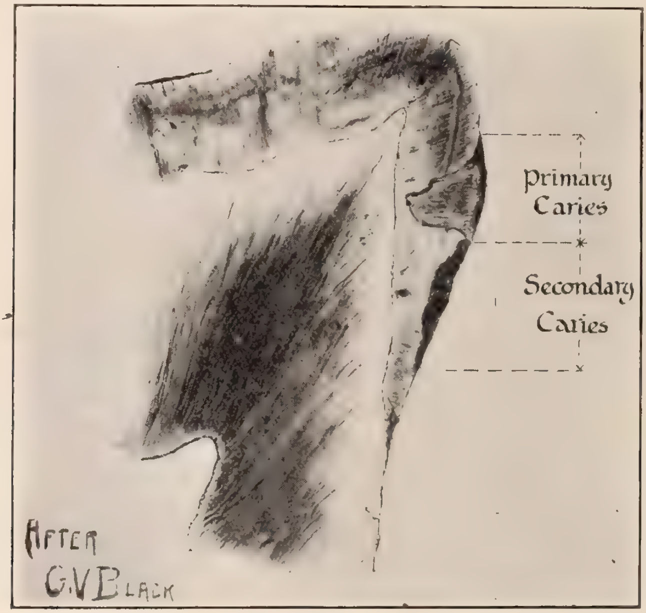


Fig. 6

MISCELLANEOUS POINTS

The interproximate gum tissue is necessary to preserve the proximate surfaces of the teeth from decay. In restoring the contact point or polishing the filling, nothing should be done that will cause any permanent injury to this soft tissue.

A beautiful knuckle at the expense of this membrane is not a profitable investment, for a return of decay at the gingival margin is the usual consequence.

While the general principles laid down should always form the basis for all operations, yet in the development of an operative technique founded on common sense, we should be able to recognize the exceptions to the rule.

The habits of the patient and the physical and mental condition should influence us in laying our plans.

In restoring the proximate surfaces with the gold inlay I think more attention should be paid to the contact point. I have seen several clinics and heard several men explain how they placed their matrices and ensured perfectly covered margins, but nothing was said about a contact point that would fit tightly against the adjacent tooth or how separation was to be obtained.

The approximal contouring of shell crowns has been more universally recognized and one of the greatest objections to the seamless crown as usually made is the difficulty in properly restoring these points.

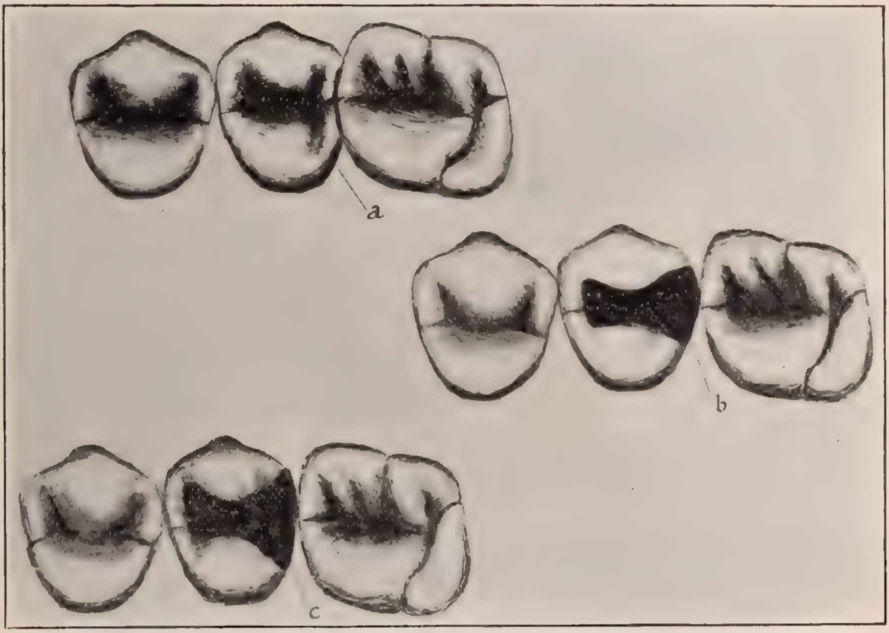


Fig. 7

RESTORATION WITHOUT SEPARATION

In closing, I would like to offer for your consideration a method of restoration without using the separator but attempting to obtain contact. In restoring with amalgam can normal conditions be restored by using the matrix and not the separator, packing the filling in firmly to bring the matrix in close contact with the adjacent tooth, then carefully removing the matrix before crystallization is complete and working a little of the surplus amalgan into the approximal space that had been occupied by the matrix and later trimming and polishing to form? Can this class of cavities be filled with gold and a tight contact be secured without using separation?

Another problem consists in having two approximating cavities, one extending over on the occlusal, the other only occupying the gingival half of the proximal surface. The large cavity is first prepared, extending occlusally and laterally, according to the methods used in extension for prevention. Access to the smaller is obtained through the larger and margins only extended so that they are self-cleansing. The smaller cavity is filled and when crystallized, the matrix is adjusted on the other tooth and the larger cavity filled.

In your opinion, are such deviations from the methods as laid down by Black and others justified by satisfactory work? My small experience would indicate a limited amount of usefulness for these methods in those cases where there exists plenty of interproximal space and their greatest drawback lies in the temptation to use them indiscriminately, because of the short cut they offer to the busy dentist.

MECHANICAL PROCEDURE AS A PROPHYLACTIC MEASURE IN CARIES*

By Thos. E. Weeks, D. D. S., Philadelphia, Pa.
Prof. Clinical Dentistry, Etc., Philadelphia Dental College

WHILE the movement for preventive dentistry progresses and the profession is gaining in knowledge of prophylaxis and oral hygiene, we cannot ignore the fact that almost every case that comes to us presents one or more cavities which must be filled.

We will confine ourselves to a consideration of these cavities in accord with the caption of this paper.

While the preparation and filling of cavities has been written about and discussed so much that it might seem that there was no occasion for further discussion, a little observation of operations coming under our notice will show that there are still differences of opinion, arising, probably, from a failure to agree upon certain fundamental principles.

We will not discuss prevention by extension *per se*, but will attempt to analyze the operation of filling certain teeth into its elements, in the hope that we may gain a clearer understanding of what we should attempt when called upon to fill these cavities.

As it is proximal surfaces that present the greatest difficulties, we will consider only these surfaces and unless otherwise noted you may assume that we are treating molars and bicuspids.

A study of any considerable number of extracted teeth will reveal the fact that caries begins at certain definite points and that when it spreads the spreading is confined to an area bounded axially by the angles, gingivally by the gums and occlusally by the contact point.

A closer study of these teeth will show that this surface spreading is influenced by the contour,—flatness or roundness,—of the proximal surface.

It is pretty generally recognized that the micro-organisms of caries are protected during their initial attack by "gelatinous plaques" and that these plaques form only at points which are protected from any form of friction. One of the best protected areas is just to the gingival of the contact point on proximal surfaces. The extent of this area depends upon the *breadth* of the contact point, the width of the interproximal space (at the base), and the form of the embrasures.

---

*Read before the Annual Meeting of the Reading Dental Society, Feb. 3rd, 1910.

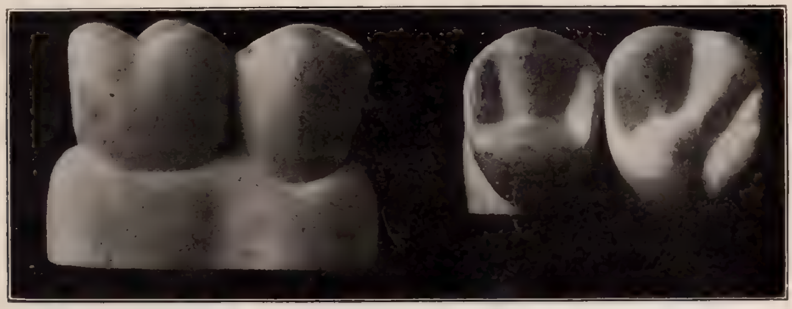


Fig. 1. Fig. 1a.

Figs. 1 and 1a show a model of teeth in normal relation before they were attacked by caries.

All agree that the surfaces most difficult to cleanse and maintain in a cleanly condition are those flat proximal surfaces which present a broad contact with the adjoining tooth, and *per contra*, those proximal surfaces requiring the least effort on the part of the patient to insure cleanliness, are those rounded surfaces presenting a small contact with the adjoining tooth, interproximal spaces broad at the base and broad embrasures.

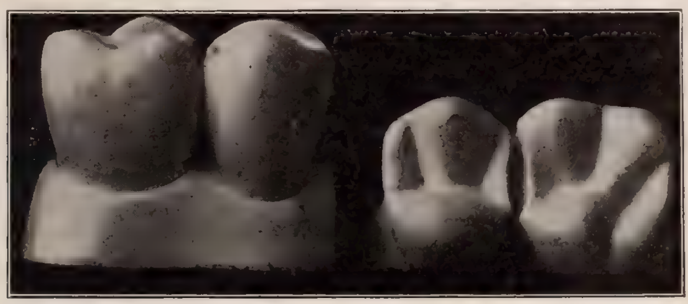


Fig. 2. Fig. 2a.

Figs. 2 and 2a show the same teeth after they had moved together from the loss of proximal contact through caries.

These observations give us the keynote in the treatment of these surfaces. It is conceded that teeth having a rounded proximal surface, making a small firm contact with their fellows, interproximal spaces sufficiently broad at the base to permit of their being filled with healthy gum tissue and broad embrasures, present ideal conditions which make for the maintenance of health and comfort.

The natural conclusion is that when these conditions do not exist that it is our duty to establish them as nearly as possible under the conditions prevailing in each case.

In each space there are two tooth surfaces to consider. If one is still perfect we are limited to the other in our efforts to establish ideal conditions, and the fact that one surface is still unattacked should lead us to redouble our efforts to so change the conditions that favored the inception of caries on the one surface, as to protect the surface which is still sound from further danger.

When a case presents with even one carious cavity it may be regarded as a symptom or indication of some departure from the normal. The purpose of this paper is to emphasize some of the mechanical procedures which may improve conditions and to show that mechanical procedure is a necessary part of any treatment intended to restore or establish normal conditions and function.

In cavities confined to surfaces showing structural imperfections the problem is not difficult, still we see many evidences that the simple rule of restoring these surfaces so that no points will remain where the organisms of caries may find lodgment and protection, is frequently violated. If this is true how much more necessary is it that we have a clear conception of the conditions which favor or discourage the beginning of caries on proximal surfaces.

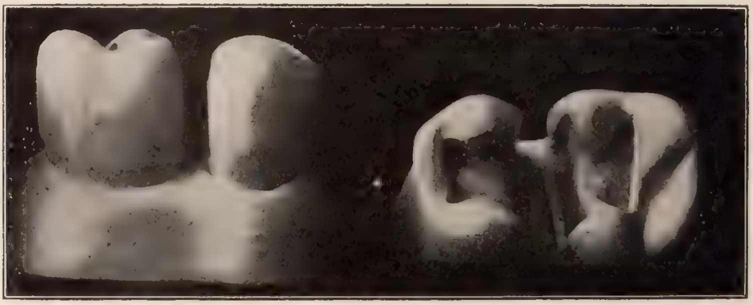


Fig. 3. Fig. 3a.

Figs. 3 and 3a show the cavities prepared for inlays. Note the broad cutting and the great strength of the teeth, insured by leaving the buttresses of dentin between the cusps.

Before considering the mechanics of cavity preparation we cannot refrain from referring to that deep-rooted prejudice held by some against cutting away what is commonly termed "good tooth substance," and to urge every one who has this feeling, to study extracted teeth having cavities, prepare these cavities as far as establishing the cavity margins, dissect them and become familiar with the strength and weakness of the enamel and the "architecture" of the enamel cap. When one has done this he will realize that there is such a thing as leaving what is left of the tooth stronger and better able to support a filling, by cutting away some apparently good tooth substance.

We have been too prone to forget that there are two distinct substances forming the crown of every tooth: dentin and enamel: that the enamel is a cap for the dentin and has a definite architectural structure; that caries *begin* in the *enamel* and penetrate it to the dentin; that when penetrated, the continuity of its architectural structure is broken and that the walls bordering the cavity present elements of weakness which must be considered and favored; that the filling is seated or anchored in the *dentin* and that the walls of all cavities present dentin in the deeper portion and enamel in the peripheral portion.

This peripheral portion, the enamel, is the substance with which we have to deal chiefly in the study of caries and the filling of cavities. This being the case, how important it is that we should be perfectly familiar with its histological structure, its physical character and its architectural structure.

As the changing and improving of conditions depends largely upon the breadth of the cavity bucco-lingually, we will consider first the outline of the cavity. This has to do solely with the *enamel*. The position of the buccal and lingual walls is governed first, by the extent of decay, second, by the contour of the proximal surface and third, by the breadth of the interproximal spaces.

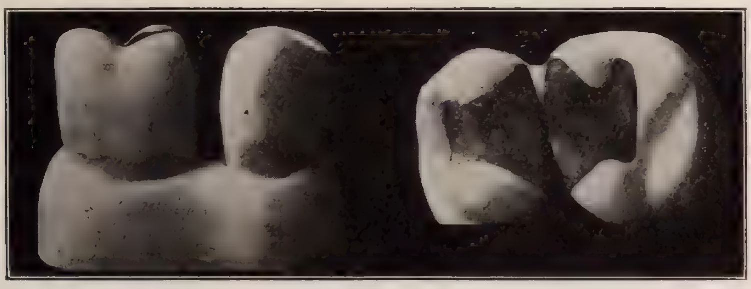


Fig. 4. Fig. 4a.

Figs. 4 and 4a show the inlays in position and illustrate what may be accomplished by cutting alone, in establishing proper contact and a good interproximal space.

In this consideration we may divide these cavities into two groups:

First: Those in which the extent of caries compels the placing of the buccal and lingual walls at or beyond the angles.

Second: Those in which sound, well supported enamel walls *might* be established within the contact area, or in other words, where the establishing of the buccal and lingual walls at or near the angles would incur the sacrifice of some sound enamel.

As the first group usually enables us to accomplish that which is desirable without the sacrifice of any sound, well supported enamel, we will eliminate it in this discussion. It is in the second group that discussion has arisen.

Dr. Black has given us the dictum that "the margins of these cavities should be extended to areas *relatively* immune from caries." As already assumed, this immune area depends upon the breadth of the contact point, the width of the interproximal space at its base and the breadth of the embrasures.

Here we have three points to consider in mechanical procedure for the improvement of conditions:

First. Can we establish a small contact point and leave our margins in a position where they will be habitually clean without sacrificing sound enamel unless we permanently increase the space?

Second. Can we, without disturbing the occlusion, secure a permanent increase in the space so that good conditions may be established, without sacrificing sound enamel?

Third. Must we depend upon broad cutting bucco-lingually alone to enable us to so improve the contour as to establish ideal conditions?

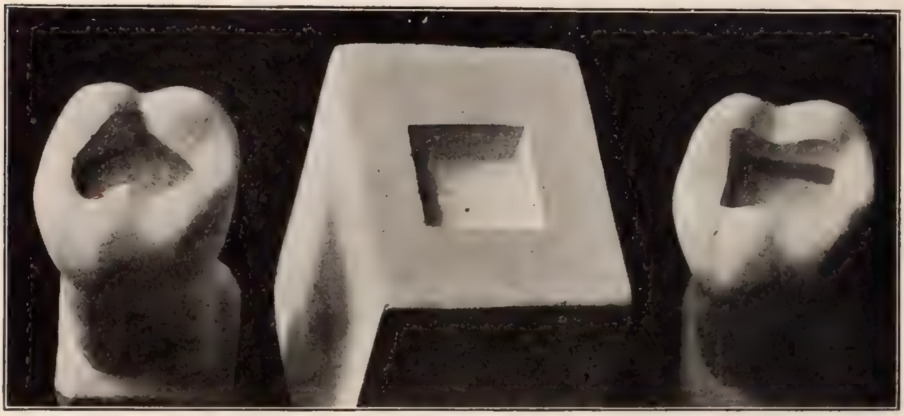


Fig. 6. Fig. 5. Fig. 7.

Fig. 5 shows a plain mortise in a block of plaster.

Fig. 6 shows a simple mortise in the dentin, in a model of a lower first molar. The walls are stained to indicate enamel and dentin, and show the bevel of the enamel walls to insure a strong cavo-surface angle.

Fig. 7 shows an occlusal cavity which involves all of the fissures, and illustrates the modification of the mortise as it appears in occlusal cavities.

By this analysis we see that an improvement in conditions is secured by cutting broadly enough bucco-lingually to enable us to give the proximal surface a more rounded contour and a small contact point, or by permanently separating the teeth so that this result may be obtained, or by a combination of both. In either case it is a mechanical procedure.

It is apparent that when contact prevails throughout the arch, the widening of an interproximal space involves the movement of more teeth than the two that bound the space. This movement *might* result in a disturbance of the occlusion that would be unwise. As this is the only negative indication we would favor the widening of the space by slow separating whenever it is not absolutely contra-indicated, rather than sacrifice too much sound tooth substance. The models will show how much can be accomplished by cutting alone.

A study of illustrations, and of transverse sections of teeth will show how much the *enamel* walls can be beveled from a moderately narrow cavity in the *dentin* and still avoid unsafe cavo-surface angles in the filling.

When we consider the mechanical detail of cavity form we see that if teeth were of a homogeneous structure the three cavities in the plaster block would be a good illustration of the two types of cavities we have to fill, but because of the structure of the enamel, it becomes necessary to modify them for its protection (see illustrations); thus all cavity walls naturally divide into two parts, the deeper part in the dentin and the peripheral part in the enamel, which may be designated as "dentin wall" and "enamel wall."

That portion of the cavity which is in the dentin presents a *mortise* either simple or "dovetailed." From this mortise the enamel walls are beveled, i. e., established in a plane which forms an angle with the dentin walls; this to present a stronger enamel border. -cavo-surface angle.

The writer is encouraged to consider only this angular, box-like form of cavity because a series of questions and a set of models sent to every college in the country revealed the fact that the majority of the colleges are teaching this form. The reason for its popularity is that

First. It affords a firm "seating" of the filling, or resistance against direct stresses.

Second. Its dovetailed mortise form affords "retention" against *tipping* stresses.

Third. It affords the most *convenient* form for the easy and perfect introduction of gold amalgam or an inlay, "convenience form."

This box-like form is applicable to *all* cavities no matter whether they be broad or narrow bucco-lingually.

At this time when public infirmaries are being established throughout the country in which the patients are treated by different operators, it is extremely desirable that there be a certain unity both as to ideas and methods.

The writer was surprised in reading the questions already referred to by the unity which already prevails among our teachers. Their cavity forms and the instruments and methods employed to make them all tend toward simplicity and systematic, sequential procedure. It is with the desire to give an insight into these popular methods that we write what follows.

Following the sequential steps in the preparation of cavities, the first procedure is the breaking down of all unsupported enamel, opening the cavity and establishing its outlines. This is accomplished with chisels when the enamel is unsupported by dentin. When extension of fissures is necessary it is best done with *dentate* fissure or pear-shaped burs. Where *lateral* extension of cavity walls is necessary, small round or inverted cone *cavity* burs are used for undermining the enamel just below the dento-enamel junction, when the enamel can be cut away with chisels.

The next step, removing all *softened* dentin, is accomplished with spoon or discoid excavators. This is desirable at this juncture as it reveals the extent of the cavity as established by the extent of caries in the dentin and enables us to better diagnose and prognose the case.

In the next step, giving the cavity the proper form, first for resistance, next for retention and convenience. Resistance to direct stresses is obtained by making the gingival and pulpal walls flat in both horizontal planes. Retention is secured by making all the axial walls meet the lingual and pulpal walls at *definite* angles and making all axial line angles definite. These walls and angles are formed with inverted cone or square end fissure burs and hoe or hatchet excavators.

The final step, the beveling and finishing of enamel walls, is done with chisels, enamel hatchets and gingival margin trimmers. These are really chisels, as their blades have the chisel form.

Many are using the small carborundum cavity points for much of their enamel cutting and finishing; in many instances they not only save burs, but increase the comfort of the patient, especially when they are kept wet.

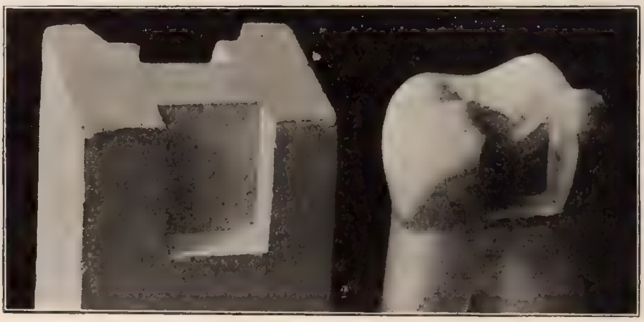


Fig. 8. Fig. 9.

Fig. 8 shows a mortise which involves two surfaces.

Fig. 9 shows its application to a mesial cavity in an upper molar where the buccal and lingual walls are sufficiently strong to permit the use of the dovetail mortise.

The sudden popularity of the cast inlay has done much to advance the broad cutting idea and unify cavity form. Many who hesitated to cut broadly for an amalgam or malleted gold filling are cutting fearlessly, and I almost said, recklessly, for the insertion of inlays.

The tendency of many operators and teachers today is to prepare all cavities for metal fillings as for an inlay, emphasizing the point angles for convenience in starting a gold filling, or modifying the planes of the enamel walls to meet the demands of amalgam. Indeed, the principles of resistance, retention and convenience are the same for all metal fillings. Cavities for metal fillings, no matter how they are inserted, should have such form as to prevent any movement of the filling when in *situ*, independently of any cementing substance, except in the line in which direct stress is delivered, toward the point from which such stress comes. Experience has shown that the same cavity form which permits the insertion of an inlay is the most convenient for the introduction of any metallic filling.

In the tpye of cavities under consideration, especially in upper bicuspids with high cusps, there is one point to be observed in the formation of the step, that is to leave the dentin between the cusps as strong as possible. The illustration shows the ideal form.

In all these cavities involving the occlusal surface where the cusps are high and much stress is exerted upon their inclines by the opposing teeth, the cusps should have all the support possible. If this is already lost through the action of caries the cusps may frequently be strengthened by cutting to or nearly to the marginal ridge. This is one way in which strength may be given to the remaining tooth by sacrificing some sound enamel.

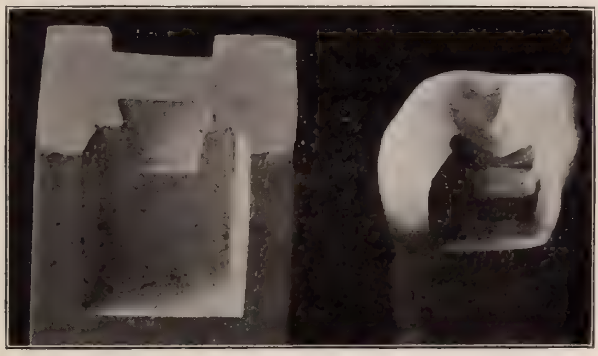


Fig. 10. Fig. 11.

Fig. 10 shows the auxiliary dovetail mortise or "step."

Fig. 11 shows the application of this form to a distal cavity in a lower molar. This is the form which it is usually necessary to employ.

Your essayist recognizes that the subject as indicated by the title is too broad to cover thoroughly in detail within the reasonable limits of such a paper, hence the effort has been made to consider only some elemental principles in that part of mechanical procedure concerning the preparation of cavities.

The making is "another story." However, the man who recognizes the principles governing cavity preparation and prepares cavities accordingly, will usually be able to insert whatever material is indicated in accord with the principles which govern in this branch of procedure.

There is one other branch of our work which has been much discussed and which is still performed by diverse methods, by the use of instruments just as diverse. That is the treatment of pulpless teeth and the extirpation of pulps.

While the number of instruments devised by dentists and offered by dealers, for all operations, is legion, they are capable of classification and have been classified to such an extent that those who have taken the trouble to understand the classification, are enabled to equip their cabinets with a minimum number of instruments, each one having its definite purpose. A clear understanding of the most effective points for the purpose for which they are designed, and the most convenient curves and angles for bringing the points into action, in hand instruments; of the best form and cut of burs for cutting both enamel and dentin, and the construction of adjunct appliances in accord with true mechanical principles, is as necessary to direct, effective and comfortable operating, as is the understanding of the principles governing our operations for the curing of pathological conditions.

That all the desirable attributes of the dentist are surely and not slowly becoming the endowment of the profession is our belief.

CASTING PURE ALUMINUM BASE-PLATE*

By Geo. H. Wilson, D. D. S., Cleveland, Ohio

THE object of this clinic is to show a method of waxing, flasking and casting pure aluminum.

The method is often called the "Cow-bell method." However. the sheet-iron bucket is one put upon the market by Dr. J. H. Billmeyer of Norwalk, Ohio. The *important factor* is the doctor's method of causing the molten metal to enter at the bottom of the mold, thus assuring soundness and denseness of the casting.

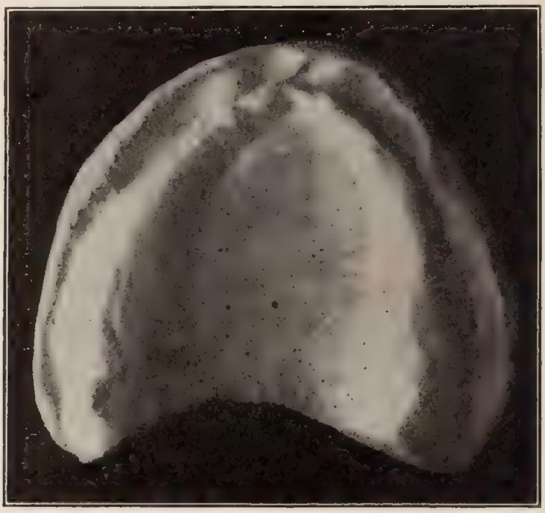


Fig. 1.

The technic consists of: 1st. Filling the impression. 2nd. Constructing the wax base-plate. 3rd. Investment. 4th. Flasking. 5th. Burning out and heating up. 6th. Melting and casting.

---

*Given as a clinic before the Ohio State Dental Society, Dec., 1909

FILLING THE IMPRESSION

The impression is filled with any non-shrinking investing compound. The Brophy Imperial is excellent, or one made from the following formula: White silica sand (lake sand), wash silica and plaster of Paris, of each one-third by volume. These ingredients are thoroughly mixed by passing five times through a sieve (kitchen flour sieve). The rationale of this compound is: Silica sand is the least fusible and changeable of any material suitable for dental laboratory use; the wash silica fills the interstices, and the plaster is used only as a bond. For casts, four volumes of this compound should be used to one of water. The impression should have a glazed surface. (Thick varnishes should not be used.) The silica compound is well jarred into the impression, thus causing the wash silica and plaster to form a smooth glazed surface upon the cast. Fig. 1 shows a cast so formed.

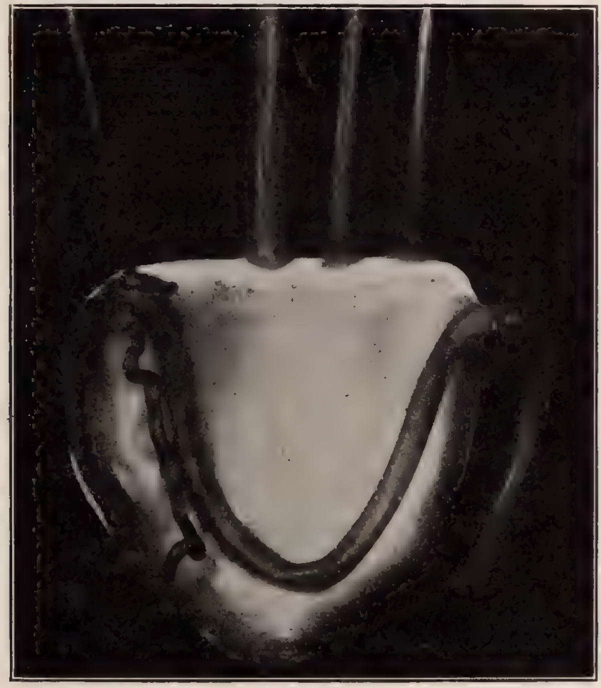


Fig. 2.

CONSTRUCTING THE WAX BASE-PLATE

Fig. 2 shows the materials used and technic. The three perpendicular rods represent three sizes of wax rolls, formed by rolling pure yellow beeswax between two hard smooth surfaces. (Top of work bench and slab of glass, both must be clean.) The small size should be 16 to 14-wire gauge and is used to form the retaining cleats. The medium size may be from 1-16 to 3-16 of an inch in diameter and is used for outlining the alveolar process and giving additional strength. The large size should be 3-16 of an inch thick, *never more,* and is used to form the pouring gate or sprue. One thickness of pink base-plate wax is evenly adapted to the silicate compound cast, and the border fastened with a hot spatula. The peripheral roll of yellow wax of suitable size is modeled into place by the thumb and finger, and attached and shaped with the hot spatula. The left side of Fig. 2 shows the wax so placed and shaped, while the right side shows the roll ready for attaching. Fig. 3 shows the case complete. In this case the labial flange from cuspid eminence to cuspid eminence is not reinforced because a suitable contour will not admit of the addition. Figs. 8 and 9 show complete restorations. The retaining cleats are next formed by taking the small sized wax roll and forming a series of loops as seen upon the left of Fig. 2. They should, for obvious reasons, be placed as near the edge of the portion of the plate to be covered with rubber as possible. These loops are attached to the base-plate with a hot spatula, and when cold are sheared off with small curved scissors. The result is seen in Figs. 3, 8 and 9. The pouring sprue wax roll is then attached to the mesial edge of the process. This wax roll should be from 1-8 to 3-16 of an inch in diameter. It should never be larger than the larger size as there is danger of some of the molten metal dropping into the mold and destroying the casting. There is no danger unless the sprue gate exceeds 3-16 of an inch in diameter. The vent gates are made of 14-gauge iron or steel wire, and are fastened to each tuberosity. See left side of Fig. 2. Fig. 3 shows the case ready for investment.

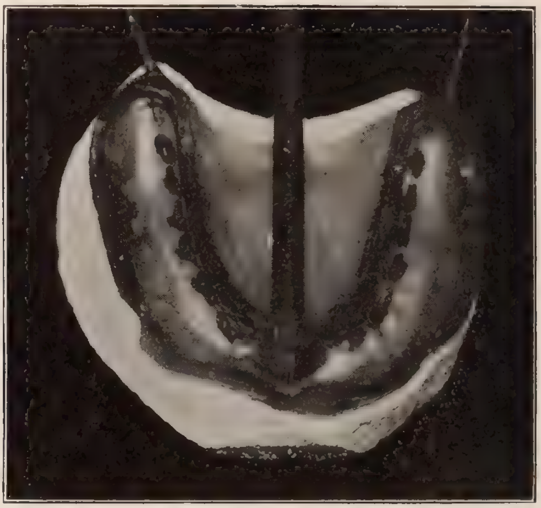


Fig. 3.

INVESTMENT

Fig 4 shows the case invested ready for flasking. This investing material consists of any good *fine* investment compound. An excellent one may be made of two parts, by measure, of wash silica and one of plaster of Paris. After the silica compound cast has been soaked in water the investment compound is mixed to a thick cream consistency and painted on with a soft brush. See Fig. 4.

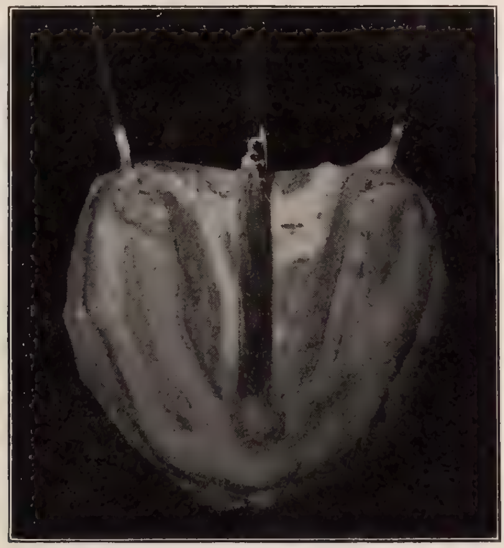


Fig. 4.

FLASKING

Fig. 5 shows the sheet iron bucket flask. The bail is removed from the ears when a bowl full of coarse silica compound mixed to a thick creamy consistency is poured into the bucket when the case as shown in Fig. 4 is pressed down nearly to the bottom of the bucket-flask, jarring it upon the bench while putting it to place. This assures that no air bubbles are formed between the two investing materials which might cause an imperfect casting. As the investment compound hardens, it is scraped out around the pouring sprue to form a cup-shaped depression to be used as a melting crucible for the aluminum. The sides of this crucible depression should be nearly perpendicular, not saucer shaped. See Fig. 6. When the investment has hardened, usually twenty minutes to half an hour (the longer time is better), the wax sprue is cut off and the bottom of the crucible is scraped smooth and flat with a broad round end plate scraper. The loose particles must be brushed or jarred out.

BURNING OUT AND HEATING UP

After twenty minutes the case may be put over the stove to dry out, but it is better to wait an hour or more until the water of crystallization has been more thoroughly taken up. The heat should be applied slowly at

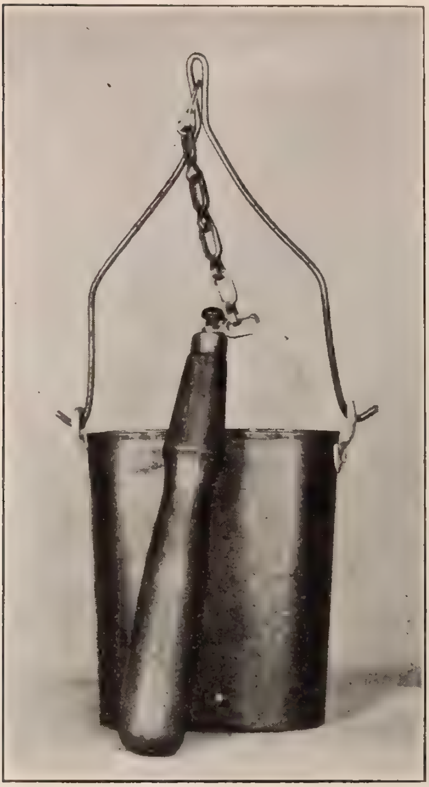


Fig. 5.

first until the excess water is evaporated. This can be done by placing a piece of sheet iron (about ten inches square) upon the gas stove. The flask should be placed upon its side on the sheet iron and a low flame started. When the wax begins to run from the pouring gate the wire vent sprues

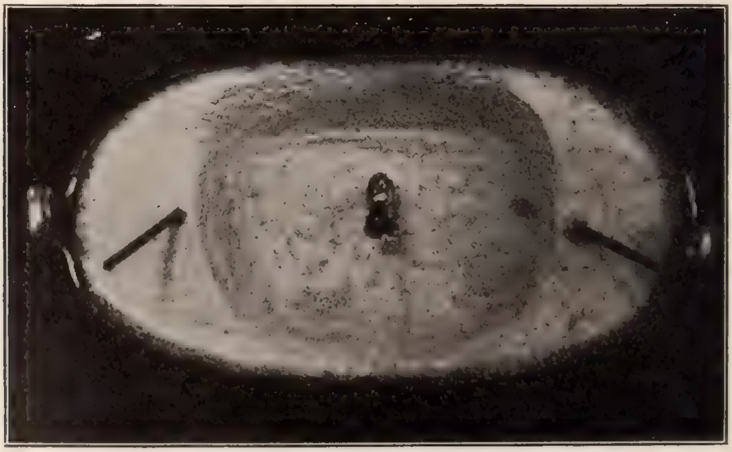


Fig. 6.

should be carefully removed and the flask placed upon the stove in the position shown in Fig. 7. The flame may now be turned on so that it extends part way up the sides of the flask. In this way very little smudge will be produced, whereas, if the melting wax is permitted to spread over the sheet iron and burn, a very disagreeable smudge will result. After forty-five minutes more the flask should be reversed with the small end of the bucket resting between the prongs of the gas stove. The full heat of the stove should be continued from one-half to an hour longer. Before placing the ingot of pure aluminum in the crucible portion of the flask, it is well to play the large blue flame of the blow-pipe upon the upper end of the bucket. If this is not done the casting may show a rough granular condition over the tuberosities, which will not appear if the investment is sufficiently heated. A brittle condition of the cast aluminum is due to another cause (overheating or oxydizing the metal).

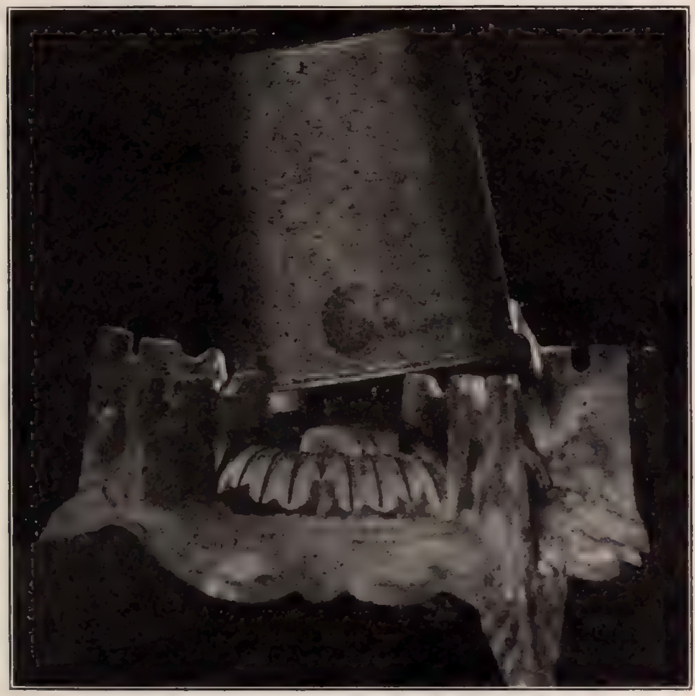


Fig. 7.

MELTING AND CASTING

The pure aluminum should be in ingot form and not in sheet form. The ingot should be large enough to more than fill the mold, but not large enough to fill the crucible. The flame used upon the aluminum should have a yellow color showing that the flame has an excess of free carbon and not of oxygen as shown by the blue flame. The molten metal should be carried (an estimated hundred degrees) beyond its fusing point, when, without hurrying, a perfect cast may be made. The metal being thoroughly melted the flame is turned off, the bail slipped into place, the chain straightened and the bucket lifted off the stove. The operator must stand where there is no obstruction to free swinging of the bucket. There should be no jerk at the start of the swing, but a steady long swing. Speed may be increased as desired, but great speed is not necessary. The bucket should be swung in a perpendicular plane, not horizontally. Motion should be kept up until the metal has crystalized, after which farther condensation cannot be

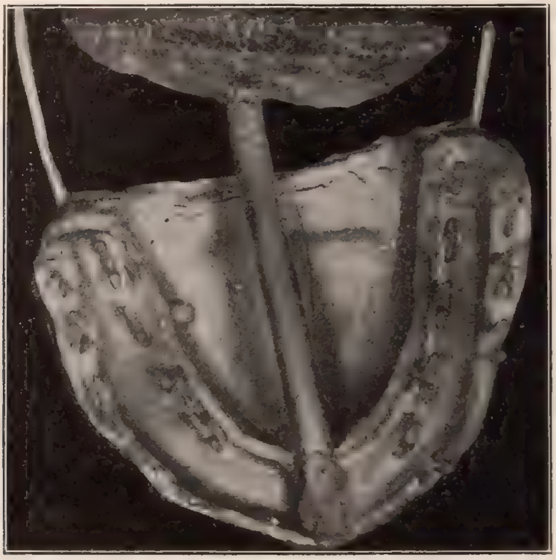


Fig. 8.

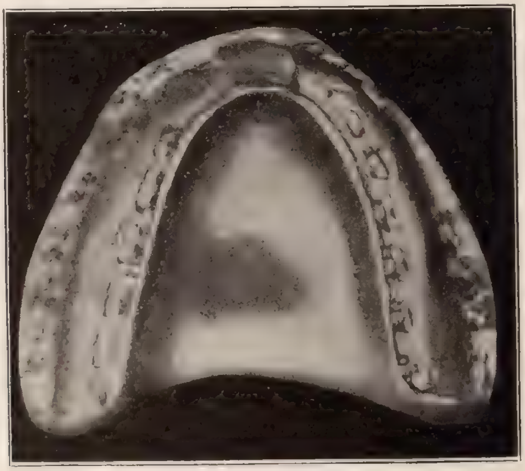


Fig. 9.

induced. The flask should stand ten minutes when it may be placed in a pan of water and cooled as rapidly as desired. Fig. 8 shows the casting removed from the investment. It is apparent from this illustration that the molten metal passed down the sprue hole to the mold and came back against centrifugal force until the mold is filled on a level with the head of metal, thus demonstrating the law of liquids seeking their level. This shows that all air must be expelled through the vent holes in advance of the molten metal and that condensation is taking place to the extent of the centrifugal force so long as the metal is liquid. Fig. 9 shows the finished base-plate ready to try in the mouth.

ABNORMALITIES OF THE SUPERIOR MAXILLA INFLUENCING MAL-OCCLUSION AND DISEASE OF ANTRUM AND TREATMENT *

By Dr. Edward. J. Bernstein, M. D., Kalamazoo, Mich.

TO begin with, I want to thank you very kindly for the privilege of addressing you. As you are well aware, I am not a dentist, but I take a great deal of interest in the common cause, that is the advancement of the welfare of our patients, and the general fund of well-being. Now it is a most encouraging sign of the times to realize that the dentist and the nasal surgeon are meeting on common ground. We have a great many points in common, a great deal indeed. For instance, the very serious question of malocclusion, which is so important to the well-being and nourishment of the human being, depends upon a large variety of causes. Dr. White has shown and given me a great deal of instruction with regard to the unique forms of malocclusion of which I was not aware, that is, a peculiar form of malocclusion which occurs through finger sucking and thumb sucking. This is quite a different form of malocclusion from that with which I have been formerly acquainted. My acquaintance with malocclusion had been only with that peculiar form which is due or subsequent to deformities of the nose. Now one of the most important causes of malocclusion, when we detect it, is nasal deformity.

In an excellent article upon the arrest of development, Dr. Eugene S. Talbot has this to say: "In man's evolution certain structures develop, and others are lost for the benefit of the organism as a whole. Since the face, jaws and teeth undergo such rapid changes, there are structures with transitory characteristics and which are more easily involved in disease than any others of the body. The laws of economy of growth centers around this struggle of organs or organisms for existence, because of this fact physiological atrophies and hypertrophies (arrest of and excess in development) occur. A study of the causes and formation of irregularities of the teeth and the maxillae show that these irregularities are seldom inherited. The exact nature and character of deformities of the teeth may be compared to a game of chess, the first move determines the game. The method and date of eruption decide the shape of the dental deformity.

---

*Read before the Michigan State Dental Society, 1909.

Whenever arrest of development of the jaws takes place there is also nasal stenosis with atrophies or hypertrophies and deformities of the bones of the nose and mucous membrane. It will be seen that the two go hand in hand. Neither is dependent on the other to any marked degree, as was formerly supposed, both being a result of an unstable nervous system. The successful treatment of one must exert a helpful influence upon the other."

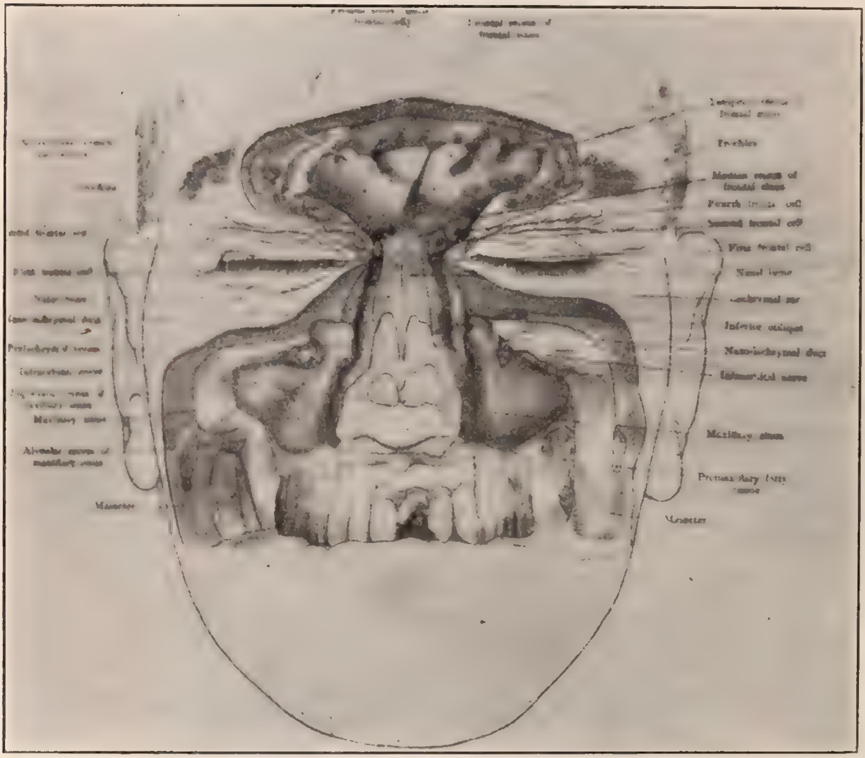


Fig. 1. Bony parts removed, showing normal maxillary and frontal sinuses and their relation to other organs of the face.

With this broad and scientific statement I wish to give my complete accord.

It is a happy time that the thinking dentist and nasal surgeon are working in harmony. Such men as Talbot, Cryer, Fletcher and other progressive dentists have helped clear away much of the mist concerning disease of nasal and oral cavities.

That hypertrophy of the lymphoid structures at the vault of the pharynx, commonly known as the adenoids, play a most important role in lack of proper development; my experience of over twenty years, amply justifies this conclusion, that no attempt at correction of malocclusion can be logically carried out without the elimination of that source at the outset. In saying this I am perfectly aware that many other causes contribute to the gothic arched palate, which is seen in all these cases.

Interference with nasal respiration comes on, often in children long before the eruption of the first teeth; it has been my fortune to operate upon babies of less than a year old, and in watching them in after life I have not yet seen one develop the gothic arch palate and consecutively, malocclusion and deformities of the superior maxilla. Nearly always, the young child's hard palate is broad and shallow and upon proper nasal function depend to a large degree its continuance in after years. You are doubtless well aware that children in whom these lymphoid masses are permitted to remain, to the detriment of their perfect nasal function, are nervous, illy developed physically, narrow-chested, bad sleepers, bed wetters and later in life are dull and stupid at school. The latter is due to the intimate connection between the lymphatics of the meningeal cavity and the pharynx. The interference with proper circulation, lymphatic circulation in the pharynx, by reason of this hypertrophied growth, influences the cerebral circulation also. Another result of persistent adenoid vegetations is deflection of the nasal septum. You will readily see that this high arched hard palate cannot allow its free proper growth; the result is that the rapidly growing cartilaginous septum is crowded out of its normal superior-inferior direction and is deflected to one side. Another cause of deflection of the septum is this: whenever there is a moderate and equal delay in the eruption of the central incisors, the premaxillary wings were symmetrically developed and there is no deviation, but when there *is* a marked inequality and delay in the eruption of one central incisor as compared with its fellow; on the side of the backward tooth there was such a displacement of the premaxillary wing as to tip out the quadrangular cartilage from its bed along the vomer-ethmoid suture.

As a rule this deviation is antero-posterior, often there is also a signoid deviation of the septum.

Enlargement of the nasal spine as well as enlargement of the premaxillary wings, may cause spurs and deviations of the septum.

Mosher has shown that excellent anatomical and clinical evidence demonstrate that enlargement of the premaxillary wings, the enlargement being due to delayed eruption of the incisor teeth, must be considered as important causes of septal deviation. There is yet more to be said concerning the teeth. They not only do this but also cause narrowing of the anterior and posterior choanae of the nose.

The least cause of deflections of the septa are trauma. If this were not so the negro, who is subjected in possibly greater frequency to such rough usage and has almost never a deflection of the septum, would be at least equally the victim of deflected septa.

Now what has the dentist to do with the Nasal Septum? Your concern in it lies in this fact, that the causes which produce septal deflection lie at the bottom of chronic suppurations of the maxillary antra.

Dentists, as a rule, object to early extraction of the first teeth because it is said the second teeth erupt irregularly if the first teeth come out too soon. If this is so, there are two horns to the dilemma, says Dr. Mosher, leave the first teeth in as long as possible and deform the septum, or remove the first teeth early and deform the second, but keep the septum straight. Most men and all women would prefer straight teeth with a crooked septum to crooked teeth with a straight septum.

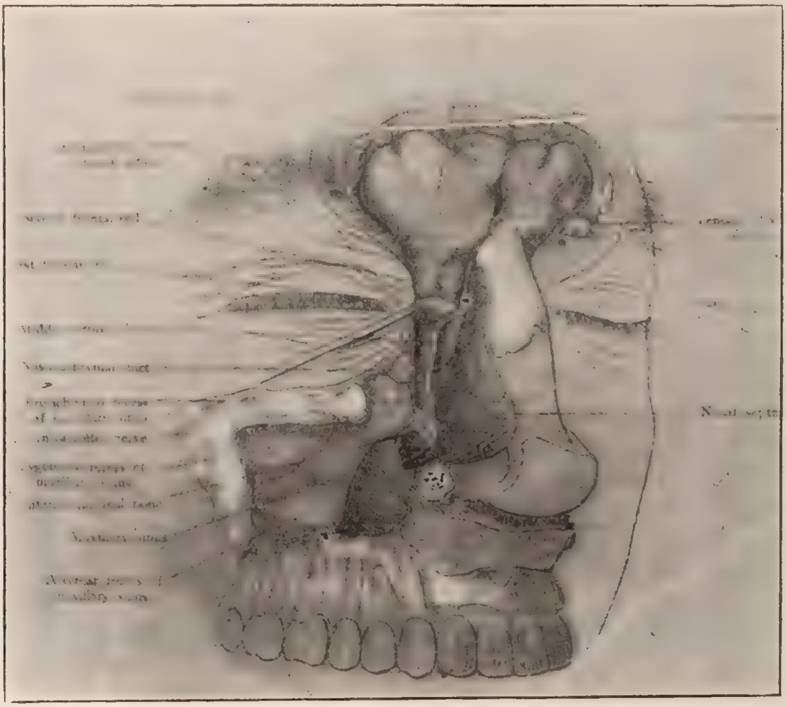


Fig. 1a. Shows the recesses often encountered in Maxillary Antra.

Just at present there is a good deal in dental literature about widening the arch of the palate and so widening the nasal fossae. The old-fashioned split plate would undoubtedly accomplish this. It is yet to be demonstrated beyond a doubt that the modern methods accomplish more as a rule than a change in the angle of the teeth and an apparent widening of the arch. It is to be hoped that it will soon be proved that the nasal fossae can be widened by widening the arch of the palate. Because, if it can be brought about to any appreciable extent, the dentist can do much to prevent and to correct deformities of the septum. Dentists maintain that they can ensure by treatment the regular and normal eruption of the incisor teeth. By accomplishing this they can save many a septum from deformity.

MAXILLARY SINUS SUPPURATION

To properly appreciate this subject, I must tell you that the maxillary sinus is developed as an involution of the mucous membrane of the nose in intra-uterine life, though the cavity is only indicated at birth. It does not, however, fill out the maxilla until near the eighteenth year.

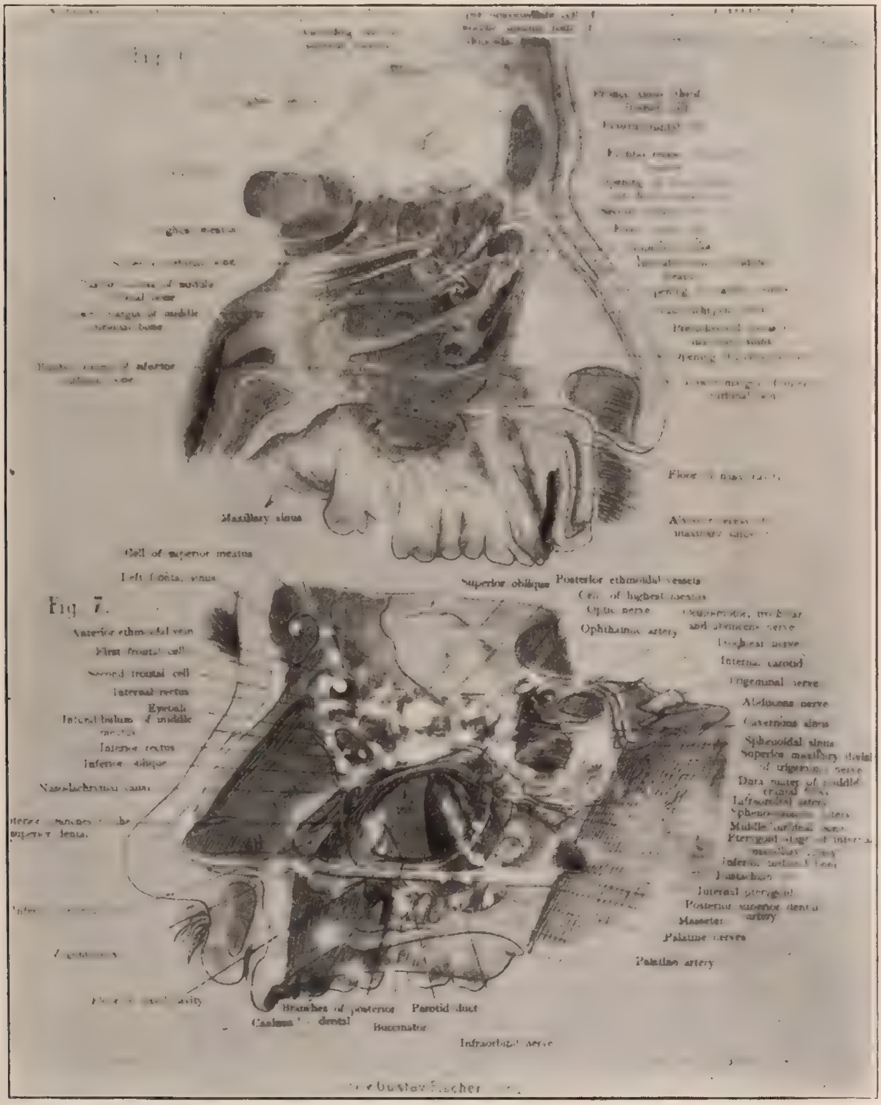


Fig. 2. These two figures show the relation of the various antra or sinuses and to each other and the lower one the nerve and blood supply.

The antrum of Highmore or maxillary sinus, is a large triangularly-shaped cavity hollowed out of the body of the maxillary bone. The inner wall or base, presents, in the disarticulated bone, a large irregular opening which communicates with the nasal fossa. The margins of this aperture are thin and ragged, and the aperture itself is much contracted by its articulation with ethmoid bone above, the inferior turbinated below, and the palate bone behind. In the articulate skull this cavity communicates with the middle meatus of the nose by one large or two smaller openings left between these two bones; i. e., the turbinates. In the recent state one opening alone is found sufficiently large to admit the end of a small eustachian catheter, the other being closed by the lining membrane of the sinus.

Crossing the cavity of the antrum are often seen several projecting laminae of bone similar to those seen in the sinuses of the cranium; and on its posterior wall are the posterior dental canals, transmitting the posterior dental vessels and nerves to the teeth. Projecting into the floor are often several conical processes, corresponding to the roots of the first and second molar teeth (this number of projections is variable as the antrum may extend so as to be in relation with all the teeth of the true maxilla, from the canine to the wisdom tooth). Occasionally the floor of the antrum is perforated by the teeth. The size of this cavity differs widely in various races and even in the two sides of the same individual.

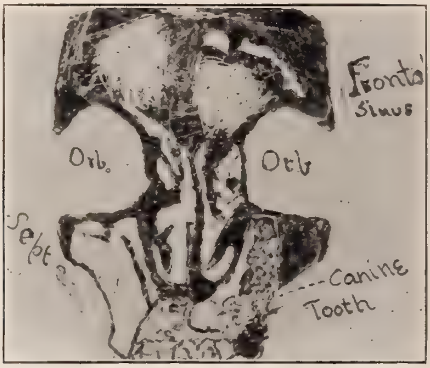


Fig. 3. Here is a carious tooth, entering right into and infecting the antrum. Here on left side you see the maxillary sinus is divided more or less completely by a septum, and then here is another interesting thing. This is a large alveolar process of the maxillary antrum. This ought, by right, to end right here on a level with floor of nose, but it has an enormous maxillary process which goes right underneath the floor of the nose.

So much for the usual thing, but one dare not allow himself to feel that with such information he could feel at home. Almost invariably when you have to deal with a diseased antrum it departs from the type. I shall later show you upon the screen some of the anomalies with which you will have to deal. There are some five or six prolongations of this sinus encountered at times, one an alveolar or inferior burrowing along the inferior border of the maxilla, a palatine resulting from the protrusion of the cavity of the antrum between the two plates of the palatal process, a suborbital corresponding to the orbital process; a zygomatic formed by the continuation of the cavity into the process of this name and separated from the preceding by a lamina of bone which corresponds to the bony canal of the infraorbital nerve and finally a posterior prolongation.

Of all these the first one is of most importance to you as dental surgeons, as regards the pathology of the sinus, for through this the danger of infection by way of the teeth is notably increased as the fangs of more teeth may thus lie in the cavity.

The type of normal antrum is that of a single more or less large cavity as we have seen, but frequently we see one in which there are several compartments divided from one another in part by membranous or bony walls. Now these are not merely called to your consideration as anatomical curiosities, but because the proper acquaintance with them is necessary from a surgical point of view and essential for the treatment of these troubles.

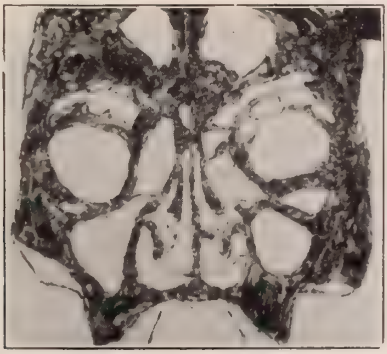


Fig. 4. This is a section taken from a skull split in half and placed between two plates and then a drawing made over that. Now I want to show you: Here are two maxillary antra, on same side practically. This one is divided more or less by the septum, and not only that but it has an accessory sinus up there on right side. On left side is a large maxillary antrum and here is an external antrum on that side. Now this septum has an enormous spur which infringes on the inferior turbinate bone and has an enormous hypertrophy, you can readily understand, if this sinus had become infected how almost impossible it would have been to drain by this normal opening, and this patient would not have been cured by attempting to drain that antrum through the alveolar abscess or through the inferior. This is a frontal sinus, left side, and you can see it connects by very small canals with the ethmoidal sinus, which in turn drains into the maxillary sinus. It would be foolish to attempt to treat an Empyema of maxillary sinus by treating from the maxillary sinus because here is where the sinus is simply last of a series of sinuses.

Do you not see how futile it would be in such a case as this to try to cure an empyema by simply opening one compartment by pulling a tooth and washing, while the adjacent compartments constantly drained into it? Another set of anomalies are those due to narrowing of the maxillary sinus, the appreciation of which during life, being of great significance, for it makes it impossible to reach the antrum by the ordinary means (alveolus or inferior meatus) applicable for normal antra. These narrow antra are due to the fact that in their development not enough of the cancellous bone is resorbed. This lack of development may cause the floor of the antrum to be from 6 to 9 mm. (about one-fourth to one-third inch) above the floor of the nose. That in these cases the roots of even the molars are a considerable distance from the floor of the antrum. Cases are known in which this lack of resorption has left no antrum at all upon one or both sides. As you know from your study of anatomy, each accessory sinus normally drain into the nose by well known channels entirely independent of the Highmore antrum, but through the formation of these before mentioned offshoots, the antrum is often but the lowermost portion of a regular system of cells.

Another practical point in the consideration of this cavity is that of the extreme narrowing which occurs either through the lessened resorption of the spongy bone in early life or through the atrophy of the intra-nasal contents, by which means the external nasal wall is forced into the lumen of the antrum. The calibre of the antrum is also much encroached upon by the sinking in of the facial wall; this gives the jaw a most peculiar appearance; in that, just above the alveolar process there is a deep groove, making the malar process stand out (by way of contrast), very prominently.

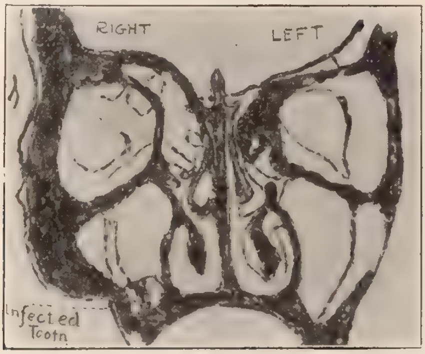


Fig. 5. This specimen shows two enormous antra, each more or less completely subdivided into two or more compartments by projecting lamina. In the left one, the saw has caught an incysted tooth projecting into the alveolar projection. You will notice the enormous middle turbinate which is in contact with the septum and doubtless caused pressure symptoms. On the Right side, the median portion of the antrum drains some of the ethmoidal cells.

The mucous membrane of the maxillary sinus is of the same histological structure as that of the middle meatus of the nose, that is, it consists of three layers very closely united one to the other and almost inseparable under ordinary conditions. The topmost layer made of ciliated columnar epithelium, while the lower ones are of the regular type of columnar epithelium, next to it is a layer fibrous connective tissue and then a layer of periosteum; as I said before these are all more or less intimately connected so that it is well nigh impossible to separate them.

You will now see that developmentally, physiologically and anatomically, the maxillary antrum must be viewed as a nasal organ. Its function is largely to cause an amplification of the voice, giving it resonance (which it loses when filled with secretion) and to lend character to the face.

ETIOLOGY

Even though you may not treat nasal diseases you must still be sufficiently interested in the cause of these troubles to know what diseases other than the teeth produce these affections. Therefore you must know that we divide them into those due to genuine and progressive inflammations. The genuine inflammations are due to diseases of the mucous membrane itself, while the progressive inflammations are due to involvement of the mucous membrane in disease of the adjoining bone (face or teeth).

The genuine inflammations are due mostly to influenza, which as I told you in the beginning, was accountable for the great strides we have made in the study of antrum troubles, so you see it has not been altogether an unmixed evil. Next in point of frequency is acute coryza. Both these are of microbian origin, but the organism which causes it has not yet been separated. Next come, in point of frequency, croupous or lobar pneumonia, typhoid fever, facial erysipelas, all the exantemata of childhood such as measles, scarlet fever and diphtheria; smallpox and cerebro-spinal meningitis, as etiological factors.

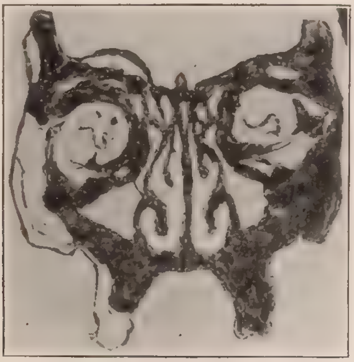


Fig. 6. This specimen shows two very small and irregular antra, each draining more or less completely the sinuses above. On right side there is an orbital projection and a small lamina partly closing off the ethmoid. On the left side, the very small antrum completely drains the ethmoid and shows how small antrum is further reduced in size by sinking in of the face. In neither antrum is opening through the alveola practicable.

It is, however, the progressive inflammations that most neariv interest you, these are the results of two conditions; first, through injuries to the bony wall, causing hemorrhage into the mucous membrane and into the cavity. Now I must tell you that even in health we may find all sorts of pus-producing organisms in the mouth, nose and the contiguous cavities, but under ordinary conditions these do no more harm than if they were corked up in a bottle. But when an injury is produced, with the outpouring of blood, you then have every condition necessary for their rapid and harmful growth, and they soon cause pus to form in these closed cavities. But it is *not only* the conditions just mentioned which cause the cavities to be infected; injury may carry the infectious matter into the sinus; this infectious matter may be a dirty piece of cloth or the tip of any unclean instrument. Then secondly, it may be caused by primarily diseased conditions of the bones next to the sinus; and in the first line periosteal and subperiosteal abscess of the alveolar process consecutively to caries of the teeth. Further, tertiary syphilitic disease causing more or less destruction to the bony walls of the antra, such, for example, we often find as a more or less complete ulceration of the roof of the mouth (the hard palate).

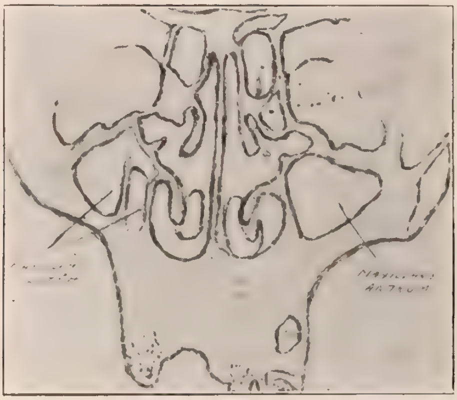


Fig. 7. Here is a most interesting case. As you remember from your embryology that the maxillary antrum is developed after extra-uterine life and the development begins about the third or fourth year, and at about the sixth year there is a fairly well defined antrum. As life goes on and resorption takes place, the maxillary antrum is developed at the expense of the superior maxilla bone. In this case see how much superior maxilla has been left to be resorbed. Here is an enormous structure, and any attempt to enter this maxillary substance through the alveolar process would be given up by the average man long before he gets there. Here is a large dental cyst in this case. This is a very graphically illustrative case showing the absolute futility of any attempt to cure maxillary antrum trouble even though we are filled with the idea that it was due to infected teeth; as Dr. Pryor said, time and again it seemed that the infected teeth would rather empty into the mouth rather than enter the antrum because the muco periosteum of the antrum seems to guard against infection. Another thing is the organisms of the mouth are large aerobic; while those of the antrum are anaerobic.

Now, at the risk of repeating what you doubtless know very well, I wish to draw your attention to the fact that I spoke of *caries,* not necrosis of the upper maxillary bone, as being a frequent cause of diseased sinuses. Now, necrosis is as different from caries as is gangrene to an ordinary ulcer. Necrosis means death or mortification; it is the state of a bone or of a portion of it, deprived of life. It is not a disease, but a condition the result of a disease. The part of the bone affected with necrosis becomes a foreign body, similar to the gangrenous eschar in the soft parts, and its separation from the healthy bone is accomplished by nature or by the surgeon.

The cause of such local death in the bone may arise from injury, from lack of vitality in the cells caused by trophic changes, i. e., changes in nutrition. From excessive cold or heat, sufficient in either case to coagulate or congeal the blood in the vessels of the parts; from the cells of the parts coming in direct contact with caustics or great irritants; from the poisonous effects of infective material; from continued pressure, external or internal splints, mercurialization and phosphorous; from an impacted third molar; from the injudicious use of arsenic to destroy pulp of teeth, etc. Necrosis is often the sequela of osteo myelitis or periostitis and occasionally follows pericementitis. Because the inferior maxillary bone is less bountifully supplied with blood vessels than the superior, statistics show that it is at least five times as subject to necrosis as is the superior one. I might state here that while loss of bone from necrosis on the upper jaw is rarely reproduced, the opposite is the rule on the lower.

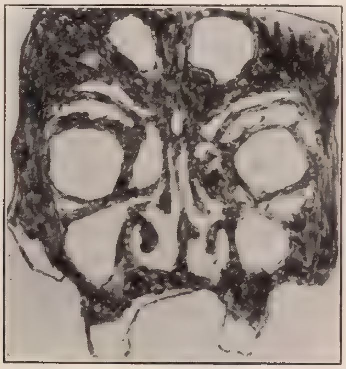


Fig. 8. Here is another case showing inequality and irregularity of the maxillary sinus on either side also showing you how this maxillary antrum drains the ethmoidal. Now then another point. If attempting to drill a hole through that Right maxillary antrum to enter into that maxillary sinus, see what a tremendous job you would have. Here is an enormously developed Gothic Dome and palate and this sinus on left side also drains the superior sinuses above.

There are special conditions other than syphilis and injury in the jaws, which do not exist in any other bones of the body; for instance, the fracture of the process in the extraction (not necessarily unskillfully done) of teeth; by peridental inflammation caused by the deleterious influences of septic material passing out of the roots of the teeth into the adjacent tissue, and from serious inflammation, the result of difficult dentition. Septic material from the roots of teeth having dead pulps also causes the loss of bone by necrosis, varying in extent from a small spicula to the whole jaw. A fragment of dead bone is a foreign body; the healthy bone adjacent inflames, softens and granulates and this line of granulation separates the dead from the living bone, the dead bone being surrounded by zone of granulation tissue. A bit of dead bone is known as a sequestrum, and the act of throwing off this sequestrum, as exfoliation. Nature's method of exfoliating is as follows: suppuration takes place at the line of demarcation, osteitis extends for a considerable distance around this line, the periosteum shares in this inflammation and new bone forms. A cavity thus forms *within*, by suppuration; and a box or case, forms *without* by ossification, the now entirely loose dead bone being so encased cannot escape. The pus finds its way through the new bone and then is presented the condition so often seen by the surgeon, viz.: a case of new bone known as "involucrum," a cavity containing pus and the dead fragment or sequestrum and a discharging sinus or "cloaca." Such a fragment will be a menace to thorough repair so long as it remains. Necrosis in the alveolae, after the acute inflammation has passed, is not accompanied by pain, unless the drainage is interfered with. The gum over the dead bone is a deeper red and there is usually a flow of pus around the necks of the certian teeth which are generally loose.

Caries, as before stated, is an ulcerative process, destroying the tissue cell by cell. The appearance of the gum about pus openings over carious bone is usually quite different from that over necrosed bone; that over carious bone is surrounded by rings of granulation tissue, while the sinuses from necrosed bone are usually simple openings without those granulations. Another diagnostic difference between the two diseases is, upon touch with an instrument, necrosed bone is hard and unyielding, while carious bone is friable and easily cut. Persistent induration of the tissues overlying the area in question always points to necrosis, never to caries; this induration persists as long as the process remains unhealed. In long continued caries anemia and even septicaemia may result from absorption of pus.

I have interjected these remarks on the differentiation of necrosis and caries because one so often hears otherwise very good dentists and surgeons confusing the two. Let us again return to our subject. I have told you that injury to the bony wall of the antrum from one cause or another, as well as carious teeth, cause antrum suppurations. The general impression in both the medical and dental professions has been that this latter causes infection of the sinus more than any other source. Some claimed that three-fifths of the diseases of the antrum come that way! From study of the anatomical relations and from clinical experience, we conclude *that this is a mistake*. In order to demonstrate this more clearly, it is necessary that the anatomical relations of the maxillary sinus with the teeth should be thoroughly understood. The development of the teeth and the face, with their great variations, should also be considered.

The development of the sinus, as you are aware, begins late; it is only indicated in the last months of intra uterine life and is not fully developed until well on to adult life. It is formed by an invagination of the mucous membrane of the middle meatus into the body of the maxilla. From the time of the invagination until the eruption of the permanent teeth the greater portion of the maxilla is occupied by the dental organs. As the invagination proceeds the cancellated portion of the bone undergoes resorption. This absorption of the internal portion of the maxilla goes on until in old age the walls become exceedingly thin. As this process goes on, the roots of the premolar and molar teeth are encroached upon by the walls of the sinus, until in many cases the points of these roots are only covered by a thin lamina of bone. Even this, in rare cases, may be lost, leaving only the mucoperiostium as a root covering. The teeth are developed by an infolding or invagination of the mucous membrane of the mouth. Disease of the teeth have influence in the mouth, and disease of the mouth affect the teeth, the causes of these diseases being more or less common to both.

It is a generally admitted fact that pus will pass in the direction of least resistance; we might suppose that by the close approximation of the apical foramina of the roots of the teeth that when an abscess is formed at their points, the infected matter would pass into the antrum instead of through the alveolar process into the mouth. Clinical experience teaches otherwise, i. e., an abscess from an infected tooth usually makes its opening into the mouth. The only reason given for this is that nature usually protects weak, though important points, in various ways. In this case I believe the mucoperiosteum lining the sinus takes up the defense, and through its osteoblastic layer builds and protects its walls against absorption and perforation. Be this as it may, it has been very conclusively demonstrated on numerous postmortem examinations that direct infection rarely occurs through the teeth.

(*To be continued*)

WIRING AND RESWAGING A GOLD PLATE*

By C. E. Talbert, Nicholasville, Ky.

It is almost impossible to reswage a gold plate in the usual way after the wire rim and the lugs for retention of the rubber attachment have been soldered on. By a method which I have devised this is entirely practicable and the result is a glove-like fit that I have not seen equaled by any other method.

After swaging in the usual way with die and counter-die (I use the S. S. W. metals) the plate is trimmed to the desired outline and the wire rim and lugs are attached. Then place in the counter-die used for the first swaging a layer about one-fourth of an inch thick of Melotte's Moldine. Place the plate in position on the die and reswage lightly in the Moldine. The Moldine prevents the wire rim and the lugs from contact with the metal counter-die, thus avoiding tearing or stretching the plate which would surely happen if you tried to reswage without using it. This method is applicable also to reswaging plates that have been worn long enough to need remodeling.

---

*Given as a clinic before the Ohio State Dental Society, Dec., 1909.

RAPID CUTTING OF DENTINE AND ENAMEL WITH CARBORUNDUM POWDER*

By H. T. Smith, D. D. S., Cincinnati, Ohio.

THE clinic represents an effort to supply a homogeneous carborundum mixture to a copper cutting point at the tooth cavity. This homogeneous mixture can be made best by using a solution of gum tragicanth, one-fourth ounce to the pint of water, allowing the same to dissolve over night, then adding one-half pound of No. 90 carborundum powder, which can be purchased from the various dental depots. This mixture should also have added to it one-half ounce of the oil of peppermint or wintergreen and a liberal supply of menthol crystals, used for its refrigerant action in cavity preparation. This mucilaginous mixture forms a compound with the heavy powder holding it in good suspension. It may then be placed in a glass syringe, preferably one with a long nozzle, and fed, drop by drop, by the left hand or by an assistant directly to the copper cutting point at the tooth cavity. A similar mixture, made with fine pumice, in place of the carborundum and used in a similar syringe, is useful in supplying the pumice mixture to a polishing brush or rubber point in cleansing teeth.

The copper points referred to above are two kinds; those sold by the dental depots and mounted in the screw-clamp porte-polisher and used by dropping into the cavity some of the carborundum mixture and supplying it to the point from time to time as the cutting proceeds. The other homemade copper points are of the disc pattern and are equally useful. They are known as copper belt-rivets (purchased at hardware stores) and those sizes should be selected, the shanks of which will fit in the porte-polisher as above. This sort of copper disc is very inexpensive and rapid-cutting, and as they are reduced in size by wear, useful points of various forms are obtained.

A more elaborate apparatus for this work may be made by thinning the mixture and placing it in a pint-size nasal douche-bottle and conducting the same through rubber tubing and a small eustachian silver catheter attached to the hand-piece and thus feeding the mixture automatically to the copper point.

A similar apparatus is used also for supplying the pumice mixture. The flow of the mixture is controlled by placing a small pressure of air upon the top of the liquid sufficient to raise it from the floor to the height of the patient's mouth, or it may be arranged for a gravity feed.

---

*Given as a clinic before the Ohio State Dental Society, Dec., 1909.

RECOVERING GOLD FROM FILINGS

By D. W. Barker, M. D. S., Brooklyn, N. Y.

GOLD filings or dust, if sold, will bring about 30 cents per dwt. I will show that it may be utilized much more profitably. As I shall consider them they are composed of the dust of both plate and solder and hence it is more profitable to make solder of the gold recovered. The filings should be free from amalgam and fusible metal as the former contains mercury and the latter antimony. Assuming 18k. solder and 22k. plate to be the chief components it may be estimated that the recovered gold will approximate about 20k. fine.

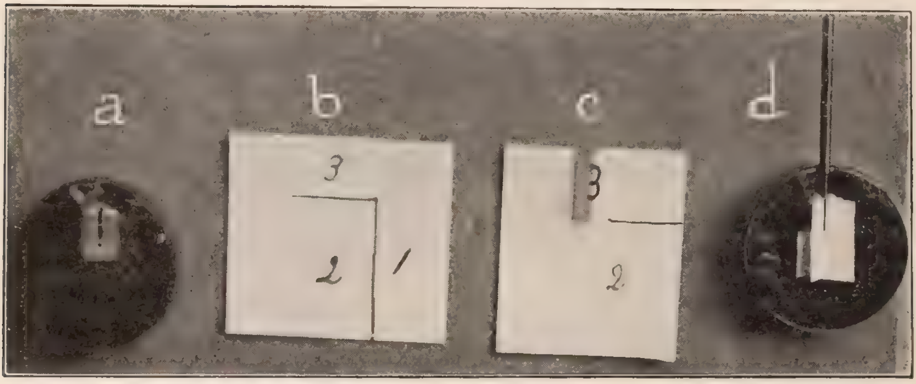
The filings should be first spread upon a clean sheet of paper and a magnet passed through the mass to free it of all particles of iron. If a mass of filings is laid in a heap upon a charcoal block the blow-pipe will fail to fuse it: it simply cakes up into a hard mass. If, however, a good-sized pinch of the filings is sprinkled thinly over the charcoal and the blow-pipe applied *very gently* the filings will melt easily into several globules, each globule having a mass of slag attached. Another pinch of filings is then sprinkled among the globules and fused, the globules increasing in size. During the fusing, the globules should be sprinkled frequently with sal ammoniac. No attempt should be made at this time to unite the globules into a large mass: all that is desired now is to secure a globule of gold large enough to be picked up with the pliers. When the globules have reached the size of bird shot they should be dropped while hot into a cup of water which causes the slag to separate from the gold; but the slag must not yet be thrown away. When the dust has all been treated and the globules collected it is then in order to treat the slag which contains many small globules of gold which failed to unite with the large one, some of which are only visible with a magnifying glass. These may now all be recovered. On a clean slab pulverize the slag with a knife blade and put into a cup of water and allow a gentle stream of water to run into it from the faucet. In a moment or two the slag is all carried away leaving a mass of fine gold in the cup. Before uniting the mass of globules it is convenient, in view of subsequent proceedings, to weigh them out into definite quantities, say 2 dwt. each. Each lot may then be melted up and sal ammoniac freely sprinkled upon it while molten until it is clean and the button boiled in acid. If dross appears on the surface it should be removed by repeated fusing, sprinkling with sal ammoniac and boiling in acid.

In this state the gold may be used for various casting purposes; but if it is desired to convert it into solder the following formula is recommended: To 2 dwt. of gold add 10 grains pure silver, 10 grains copper and 5 grains zinc, in the order named. This makes an easy flowing solder of good color about 14k. fine. The 2 dwt. of filings, which in its original state would have sold for 60 cents, is now 3 dwt. of solder worth 65 cents per dwt., equal to $1.95.

A SIMPLE METHOD FOR MAKING A GOLD BACKING FOR A STEELE FACING, AT A NOMINAL COST.

By Drs. Simpson and Ballou, Dodge City, Kansas.

Fill a tin box one inch in diameter with dental lac or sealing wax. Select large Steele facing, roughen labial surface with a carborundum stone to facilitate the adhesion of the lac. Heat facing and imbed in lac, lingual surface up, as is shown in letter "A." This will serve as a form on which to burnish your backings. Cut right angle in a square piece of 22-karat gold, 36 gauge, as is shown in letter "B." Anneal and crimp at point indicated by figure 3, as shown in letter "C." Flap marked Figure 2, now covers flap marked Figure 1, as is shown in letter "C." Invert and slide crimp marked Figure 3 into slot in facing. Expand loop by forcing a large root-canal instrument in crimp Figure 3, as is shown in letter "D." Burnish flaps numbers 1 and 2 on facing. Widen crevice by drawing blade of knife through, thus facilitating the flow of solder into bottom of loop. Carefully remove, flow solder in loop and on backing.



One can gain a better idea of how to cut backing by first cutting a pattern in paper. The advantages of this backing over those offered for sale, or a cast backing, can be readily understood.

A SHORT CUT IN RUBBER REPAIRS

By Dr. M. B. Yeoman, Lansing, Iowa

When red rubber has run through the pink in the process of vulcanizing, cut out the red spot, leaving the margins at right angles and the bottom of the cavity larger than the top. Now take a piece of pink rubber from an old plate of the same shade, trim a plug to nearly fill the cavity. Take the plug in a pair of pliers, hold over a flame (do not burn) and when it softens press to place, holding it firmly until it cools. Now trim off and polish and if the work is neatly done you cannot find the repair.

USEFUL HINTS

By A. P. Kilbourne, D. D. S., Stewartstown, Pa.

Carefully apply iodine to teeth to cut the stain, then follow with pumice mixed rather stiff with some tooth paste, and get all of the good results of the use of iodine and pumice mixture without the annoyance of the flying particles when using the brush wheel.

Teeth may be removed from old plates by covering for a few hours with chloroform, doing away with the unpleasant odor caused by burning them off.

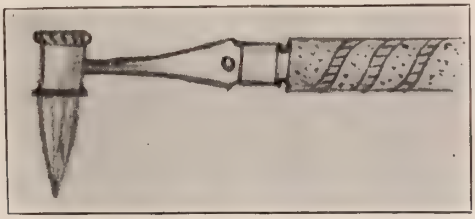
Old typewriter rolls that do not hold the paper, may be renewed by scrubbing with chloroform, or by painting lightly with a thin solution of rubber in chloroform.

Paraffin dissolved in gasoline (saturated solution) makes an ideal separating fluid, it leaving only the thinnest coating of paraffin on the impression and the model breaks away clean, smooth and easily.

HOW TO MAKE A PORTE - POLISHER FOR HOLDING ORANGEWOOD POINTS

By Dr. R. L. Hesser, Frankfort, Mo.

To construct a useful porte-polisher for orangewood points, cut the hub from an old hypodermic needle and solder it to the shank of an old cone-socket instrument. You can readily insert the orangewood "pegs" by screwing them into the hub, and the threads will hold them securely. When placed on a cone-socket handle you will have a substantial porte-polisher. I make them for patients to use at home in prophylaxis treatments.



> THE ennobling difference between one man and another is precisely this that one feels more than another.
> —*Ruskin.*

A STUDY OF MALNUTRITION IN THE SCHOOL CHILD

By E. Mather Sill, M. D., New York, N. Y.

(*Concluded from page* 233 *March Summary*)

TREATMENT

In the treatment of this condition our first duty should be to instruct the mothers in the schools and clinics, either by word of mouth or printed directions, as to what foods are best for the growing child, which are the most nutritious and healthful for the money, the best way to cook different foods, what articles of diet to avoid, and the necessity of plenty of fresh air and sunlight, and cleanliness. Warm clothing is a necessity.

These children should be given a highly nutritious diet, that is, foods that contain a large amount of proteid material. Table 2, from Atwater, shows the percentage of proteid in a number of common articles of diet which contain a high percentage of proteid and consequently have a high nutritive value, but when it is a matter of dollars and cents, we must choose those foods which are nutritious and at the same time inexpensive. The most of the foods in this table are comparatively inexpensive for their food value.

TABLE 2.—FOODS THAT CONTAIN A LARGE AMOUNT OF PROTEID, ACCORDING TO TABLE OF ANALYSIS.

	Proteids. %	Nutrients. %		Proteids. %	Nutrients. %
Beef	13.8 to 30	36.5	Cow's milk	3.4	12.6
Hen's eggs	11.6	23.2	Wheat flour	13.5	
Chicken	14.2 to 15.4	16.2	Graham flour	11.7	
Bluefish	10.2	40.3	Oatmeal	15.1	
Salmon	24.1	40.6	Maize meal	9.1	
Mackerel	15	40	Rice	7.4	
Smoked ham	14.6	51.2	Beans	23.2	
Bacon	2.8	85.2	Peas	22.9	
Dried beef	27	38			

Having suggested the proper foods, I will state the dietary I have found most valuable in these cases.

I placed the children on a diet consisting of milk (a quart a day), cocoa, eggs, red meat (once a day), fowl, fish, bread and butter, and cereals, such as oatmeal (of which 94 per cent of the nitrogenous matter is proteid), farina, hominy, corn-meal, rice, pure olive-oil, and cream should also be given if possible, with vegetables, such as spinach, stewed tomatoes, stewed corn, cauliflower, baked and creamed potatoes, purees of beans or peas, and baked beans, and fresh fruit, such as oranges, pears, apples, raw and baked and in the form of apple sauce, and stewed prunes. The children were ordered to stop school, be out in the open air as much as possible, open the windows at night and air the room thoroughly by day, go to bed at 7 or 8 o'clock and take a rest in bed for an hour or two after the midday

Read in the Section of Stomatology of the American Medical Association, June, 1909. Published in THE DENTAL SUMMARY by special arrangement with the *Journal American Medical Association.*

meal. Bathing was encouraged for the purpose of cleanliness, and a salt-water bath followed by a vigorous rub for its stimulating and invigorating effect.

It was surprising how rapidly these children improved and gained weight with no other medication than a simple iron tonic. Some gained as much as a pound and a half a week.

A mixed diet, both in animals and in man, is usually taken better and the nutrients are more completely digested and assimilated than when only one food is used. Variety in foods of the same nutritive value stimulates the appetite and prevents the patient from tiring of any special food.

"For the same amount of money the most nutrients can be obtained in the form of milk, wheat flour, corn-meal, oatmeal, sugar, beans and cereals in bulk. Meats furnish proteid in large amounts but they fail to furnish carbohydrates as the vegetables do. It has been found that it takes six to eight pounds of cereals, besides forage crops, to make a pound of meat, consequently animal foods can never compete in cheapness of the nutrients with cereals and vegetables."*

Vegetables should be given in abundance since the vegetable proteid carries with it a large amount of potassium salts which are the predominating salts in muscles, neutralize acid products and forestall rheumatism. Wheat flour and wheat bread have a high nutritive value, and more nutrients can be obtained in this form for a given sum of money than of any other food, except corn-meal.

Experiments at the agricultural stations show that bread is a very digestible food. Ninety-eight per cent. of the carbohydrate and 88 per cent. of the gluten or proteid are assimilated by the body. These experiments showed that graham and whole wheat flour were not as completely digested and absorbed by the body as white flour, although they contained a greater amount of proteid.

A child is a valuable national asset and its welfare and healthy development is of great importance to the state, which should be legally under obligation to look after it. Children who are starved, through negligence, ignorance, or poverty on the part of the parents should be fed as every child has a right to be fed; there ought to be no such thing as a starving child in our land, especially in the public schools, where children are under the daily observations of their teachers. It should be the public duty to see that such children are provided with nourishing food.

In England, Scotland and France nourishing meals are given in many of the schools at a slight cost, and are paid for by tickets previously purchased by the parents. Many meals are given free. This has been done in a few schools in this country with success. No distinction is made between those who pay for these meals and those who are unable to do so.

Let us remember that the future as well as the present is our concern in considering this great problem. Shall we civilized people allow our poor to be fed and housed worse than our domestic animals? If these horrible conditions are allowed to continue and rob the masses of their vitality, what can we expect the next generation to be? There can be but one answer, one outcome. Look to London's Stepney for the answer.

---

* Snyder—Human Foods.

I want to add this report to the reports of others, who have perhaps had a greater experience than my own or who have looked into this matter further than I have been able to do. It is only by exposing these conditions that we can reach the remedies. If by such publicity beneficent legislation may be brought about our efforts will not have been in vain.

ABSTRACT OF DISCUSSION.

Dr. E. S. Talbot, Chicago: This paper covers so much ground that it is difficult to discuss the entire matter. There are some points, however, of unusual interest to stomatologists. We all know that adenoids occur at an early age; this is also true of deformities of the turbinates and other bones of the face, nose and jaws. If the child be poorly nourished during the period of development—from the first to the twelfth year—it stands to reason that these tissues will cease to develop and will not improve later in life; that is to say, they become arrested or excessively developed and remain so. Since the brain presides over the development of the tissues of the body, when the brain is not properly nourished the poorly nourished nervous system affects the blood supply, produces arrest of development of the face, nose and jaws, and malnutrition of the teeth. I have called the attention of the profession for the last four years to the fact that the teeth are involved in malnutrition. In the eruptive fevers and other constitutional diseases the teeth do not develop strength as they would in health. I think the essayist has brought out these conditions in a general way very well. We all know that the slum children of European cities, as well as of New York, are the most poorly nourished, have the greatest deformities of the face, nose, and jaws, with adenoids, hypertrophies, etc. It is in our province as physicians and dentists to aid these children toward being properly nourished and cared for, more especially during the early developmental years, and I am sure much could be done toward alleviating, or rather preventing, deformities of the jaws and teeth, which in turn would in a large measure improve their mental qualities.

Dr. W. C. Wendel, Milwaukee: In our city we have been endeavoring to ascertain whether the children in the poor wards in the school districts are more subject to dental caries than the children in the better wards. We find very little difference between these poorer children, who have probably never consulted a dentist, and those in the better districts. We investigated some of the other school districts, where they are not exactly the poorest, but the medium class, although in these districts some attention is paid to the teeth, yet we find practically the same conditions, viz., dental neglect. Carious teeth among these children is not even so great as it is among our "better class." Tuberculous patients often have extremely fine teeth. In other cases, in which the parents are apparently healthy, we find exceedingly carious teeth in the children. Investigations have not been carried on extensively enough in this direction to be of much value, but I am of the impression that there is something deeper seated in the civilization of our people than local causes. At the same time we can not deny that malnutrition has a great deal to do with the building up of the osseous structures.

Dr. E. A. Bogue, New York: Dr. Sill did not go far enough back in his discussion. We must go back to infancy to trace the history of most of these carious teeth in children. Dr. Cronin, as you all know, has done considerable work in the matter of examination of school children. He is even now arranging for a system of school-houses, desks and seats, and a dietary and general treatment for all children under the care of the teachers. He takes the ground that we are not sufficiently paternal in this matter. That, having taken charge of the children during the hours of so called education, we should care for them morally as well as physically. He points out that if physical defects can be corrected, either by diet or anything else, that it will cost less to correct them than to suffer the absence of children so constanly from school. I have elsewhere taken occasion to allude to the fact that 40 per cent of the absences of school children from school are due to dental conditions—preventable by proper care.

Referring to the dietary, there is one thing that should be added here—the performance of function. There can be no perfect development of an organ unless its function is brought into use. If the masticatory apparatus is brought early into use, development will be far better than it is.

Dr. E. S. Talbot, Chicago: As to Dr. Bogue's criticism, I was not speaking of prenatal influences. No doubt the first period of stress is the most important to be considered. All deformities of the new-born are due, to a greater or less extent, to malnutrition, as the essayist has said. The effect, however, may be originally in the mother instead of the child.

Dr. M. L. Rhein, New York: I think Dr. Bogue has called attention to the most important feature of the whole subject. As I understand it, the essayist is endeavoring to elicit the sympathy and care of the state in overcoming this condition of malnutrition in school children. That the condition exists is most evident, and I think a careful investigation of the facts from an economic point of view will bear out the correctness of the theory that if the state intends to educate the children it can not overlook the fact that the children must be maintained in a proper physical condition to be educated, but I agree with Dr. Bogue that mere dietary considerations are not the all-important consideration. In other words, the condition of malnutrition can not be corrected by dietary measures alone.

Dr. Bogue has fittingly alluded to the fact that function of the parts must be maintained. It is impossible for us to correct the antenatal conditions. That does not lie in the power of the state. The conditions that tend to the production of deformities and caries of the teeth exist, but the point remains that the malnutrition can not be corrected unless those conditions are primarily attended to. When these conditions exist, on account of the pain involved and the discomfort, the children will not masticate their food; so the first consideration is to put the mouths of these children in a condition that will make mastication possible, in order to produce the proper metabolic changes in the food to bring about assimilation and digestion. I think it becomes our duty to point out the fact that all the conditions resulting from malnutrition are to a large extent dependent upon the proper mastication and insalivation of the food before it is swallowed, and that without the performance of these functions digestion and assimilation of the food becomes impossible. It is therefore essential that the organs of mastication be placed in a normal condition before that child will be able to use them properly.

Dr. Arthur Zentler, New York: From information I gather from abroad, I find the subject has been gone into very thoroughly there—that they recognize the need of the state taking care of the mouths of the children. This is especially so in Germany, where Dr. Jessen and Dr. Rose have organized the school dental clinics, and the care of the children is begun in the kindergarten.

It seems to me that with proper care in infancy and in the kindergarten the question of the teeth of the public school children would be to a large extent solved. If we will do something toward the development of the maxilla and the mandible of the child in its infancy through proper nourishment, it will not be necessary, as a rule, to do anything in future years.

Dr. G. V. I. Brown, Milwaukee: I feel that we are under obligation to the essayist for the results of his great undertaking in examining 1,200 children on the East Side.

He has dealt with their sociologic relation to our special field as affected by poor food, bad air, lack of air space, etc. It is plain that oral disease resulted, not only from immediate ill-nourishment in the instance of each individual, but that it went back to the time before he was born. If the mother did not have sufficient food or air, and was bearing ten or eleven children, one right after the other, it was impossible that these children could have been sufficiently nourished. Therefore, each of these factors have had an influence on the child. Dr. Wendell's point is well taken when he calls attention to the fact that it is not so much the kind of food, or the amount taken, but the benefit derived from what is taken, and, more than that, the part of the individual which is most benefited. We must not assume that only poor people have caries. After all, the question is, how much or how little of the food taken is of nutritive benefit to the individual and what effect this has on dental caries. I do not know any better way of getting at this than by such work as has been outlined by Dr. Sill in his paper. I think we are to be congratulated on having such a paper in this Section.

Dr. W. C. Fisher, New York: I agree with Dr. Brown that this question is more of a sociologic problem than most of us realize. Unless one has worked in poor sections he can not appreciate the labor necessary for the production of such a paper as has been presented. These investigations are necessarily conducted in the congested districts, because it is here that we find these conditions to such an alarming extent. And how can it be otherwise under existing conditions? How can a laboring man who is fathering from seven to ten children earn enough money to procure food and shelter for them? It is impossible. It, therefore, sifts back to the sociologic problem. How can we better the condition of that family so that that man can provide for his family?

Dr. Sill compares conditions here with those in England, Scotland and Germany. He takes nations in which the people are all of one nationality. It is far easier to school a nation by its own people. The East Side of New York is made up of the most conglomerate collection of humanity imaginable. You can not teach these people—you can not talk to them; they speak so many different languages—hence the only way is to legislate for them. In other words, these immigrants—for they are mostly immigrants or children of immigrants—come in by tens of thousands and go to these already congested districts. The father can not get work; he can not provide food; and as a result we have these physically impoverished children. The whole remedy, it seems to me, will be found in the word ''scatter.'' If these people could be distributed to the less congested districts, where they could find employment and better air, you would find they would provide food for the children, and the children would find a way to masticate it, and if they complain of the toothache they would be sent to the dentist. Those people are human beings. Give them proper environment and they will improve. We can not expect to improve them under existing conditions. They are massed together so closely it is like taking an ant hill and pushing it down in one place and it comes back in another. Good tenements won't do the work—get these people out of the tenement district. Dr. Sill states that within a few miles there are many thousands of people, enough to make a city. The moral tone is bound to be low, and the mind affects the body. There can not be a healthy body with an unhealthy mind. Until you change their conditions you can not help them. You can give them food every fifteen minutes and they will not profit by it.

Dr. W. C. Wendell, Milwaukee: Dr. Fisher spoke more on sociologic and moral lines. What I would like to know is: Do you find more caries in the mouths of this class of people, and more pathologic conditions, irregularities, adenoids and contracted arches, than you do in the better-fed class?

Dr. E. A. Bogue, New York: One of the British writers on the subject of adenoids called attention to the fact that on the equator about 3 per cent of the population had adenoids, while in Greenland there was something like 40 per cent. I talked with Dr.

Grenfell of Labrador, the missionary-physician, who told me that he thought there was over 30 per cent in Labrador. There the people live largely on blubber. In the north of Scotland and certain parts of Germany, where the people eat oatmeal cake, which is hard and requires mastication, you will find good teeth and few adenoids—that is, among the older people. I have not examined the children. But in the generation of today you will find ''store teeth.'' The young folks eat oatmeal, but they do not eat the hard cakes. This is not universally so, but to a large extent the young people eat too soft foods. Our calling is still one of repair; we have not been able as yet to exert the prophylactic measures to prevent these conditions of early decay of the teeth. We are still searching.

Dr. M. L. Rhein, New York: I think Dr. Bogue is just a little wrong in saying that our calling is one of repair. While I am ready to admit that the ideal state of prophylaxis has not been reached in stomatology, yet there is no specialty in the entire field of medicine that has the possibility that we have in stomatology. Of course, the abnormalities of birth that come from defective parentage are those that can not be prevented after the child is born. These are economic and sociologic questions that are not under consideration; but, when they can be placed aside, the future of stomatology lies exclusively in prophylaxis and not in repair. I also disagree strongly with Dr. Fisher's remarks on this subject when he says that it is possible to scatter any such heterogeneous population by any enactment of legislation. In the first place, I know the East Side of New York. I have studied it very closely and I want to say that the people there are employed in occupations—they could not remain there if they were not. It is true their employment is such as is found in London in similar localities, but his prescription is an impossibility on the start because there is use for the employment of these men. If he would modify his statements and say that efforts to induce some portion of this population to be moved to the suburban districts were enforced it would be beneficial. Now, such efforts are being made constantly in the City of New York, but the impossibility of doing anything of this kind effectually is self-apparent. The improvements in the housing of this population have been going on for years, and a great deal of benefit undoubtedly accrues from efforts in that direction. The old tenements, such as were a disgrace to the city, can never be re-erected in the City of New York. The law prevents anything of that kind in the future, and there is no question of a steady improvement in that direction, but I do insist on the point, with all due reference to the value of proper air, ventilation, etc., that it is impossible to get the benefit of proper growth and nutrition unless primarily the dental organs are in a condition of normality, so that they will be used by the child. Consequently, I claim that it is the duty of the State, if it intends to educate the child, to see that the teeth are in such a condition that the child will masticate its food, just as it is the duty of the State to see that the eyes are in such a condition that they can be used normally; and I believe, when you come to sift this whole matter, that that is the most important point that will be left for consideration in order to accomplish the results that the essayist is looking for.

THERE is only one cure for public distress, and that is public education, directed to make men thoughtful, merciful and just. —*Ruskin.*

REPORT OF COMMITTEE ON DENTAL SCIENCE AND LITERATURE

By G. C. Bowles, D. D. S., Chairman, Detroit, Mich.

(*Concluded from page* 221 *March Summary*)

Those interested will find another contribution to the opsonic treatment literature in the April, 1909, *Dental Brief,* under the caption "Bacterial Treatment of Disease," by Harry A. Duncan, M. D. The paper is somewhat popular in style but adds some interesting side lights to the subject not contained in the papers quoted.

Two new contributions for the local treatment of pyorrhea alveolaris have appeared during the past year. The first is the Bismuth Paste Treatment of Rudolph Beck, Dental Review, January, 1909. The following paste

Bismuth subnitrate 30%, White wax 5%.
Paraffin (meeting point) 5%, Vaseline 60%.
Mix while boiling.

is injected into the pus pockets being sure to have it reach every extremity, this being the secret of success. The next day the teeth are sealed and the paste again injected. The injections are repeated every other day until improvement is noted; thereafter according to conditions. In some cases only three or four injections are necessary. Fixation of loose teeth is necessary as is also prophylaxis treatment. For making the injections a half ounce all metal syringe, having a fine, flexible, pure silver needle is recommended.

The author declares this remedy far superior to any heretofore employed, cures or signs of improvement resulting in the majority of cases he has thus treated. The paste injected into fistulae of chronic alveolar abscesses, or sinuses of the jaws, produces a rapid closure of the same provided every recess of the sinus has been reached and no sequestra is present.

Dr. C. N. Johnson calls attention to this article, editorially. He says: "If this paste will do for dentistry what it is apparently accomplishing for medicine, we are one step nearer that perfect service of humanity for which we are all striving." Another good paper on "Bismuth Paste," by G. R. Warner, M. D., D. D. S., appears in the May, 1909, *Dental Brief.* The writer confirms the findings of Dr. Beck.

The second is a tartar solvent discovered by Dr. Joseph Head, *Items of Interest*, March, 1909. By accident Dr. Head discovered that hydrofluoric acid would dissolve tartar without in any way attacking the enamel or cementum. This led to experimentation resulting in the discovery that the acid salt of ammonium fluoride would similarly attack and dissolve tartar, and that it could be safely employed for this purpose in the mouth.

"A solution of this salt was found to have the power to soften large lumps of tartar so that after one or two applications of the solution they could readily be removed with the sealer, and microscopic scales were found to be absolutely dissolved, leaving the surface of the treated root smooth and in a receptive condition for the re-attachment of the gum. Teeth loosened, where there appeared no irritating tartar in the pockets, also steadily grew firmer and more comfortable under the semi-weekly applications of this solution. When injected into fistulas prompt healing followed as the lime salts in the dead bone were rapidly dissolved and the bone cells stimulated to rebuild the infected area.''

The solution should be applied with a rubber syringe with a platinum point. It should always be injected, never applied on cotton.

The roots should first be sealed as thoroughly as possible, the gums protected on both sides with cotton or napkins, and the pockets filled full with the solution. All excess should be carefully absorbed for if allowed to escape and dry on the mucous membrane a burn results, similar to that of carbolic acid. After two minutes the mouth is rinsed with water. The applications should not be made oftener than twice a week. Soreness of gum and tooth follows the injection. This disappears by the end of the third day and on the fourth a new application can be made.

The bifluorid solution is not offered as a panacea, in itself, for pyorrhea, but properly and carefully used it will largely increase the comfort of patients so afflicted and will multiply the number of absolute cures.

Dr. Robert Goode is one of those who believes that pyorrhea is a ''local condition'' and who knows that it can be permanently cured by local treatment by the ''Younger method,'' which method he is willing at any time to demonstrate to any one who wishes to call upon him at his office in Chicago.

This method Dr. Goode describes in a paper entitled ''Pyorrhea Alveolaris,'' appearing in the May, 1909, *Dental Brief*. Briefly, the procedure is: Flood the pockets with one-half per cent cocain anesthetic, wait two or three minutes and remove all deposits from one tooth at a time with instruments of the ''Younger Set.'' Force the loosened deposits from pocket with a warm sterilized wash, then flood pocket with lactic acid, using a flexible, dull-pointed needle in the hypodermic syringe for the purpose. Then let that tooth alone. If any deposits remain they will be manifest in two or three weeks, when they must be removed. Loosened teeth must be made stationary. This procedure in Dr. Goode's hands renders the treatment of an advanced case of pyorrhea simpler than the treatment of a bad alveolar abscess.

Dr. Goode says ninety per cent of our patients have pyorrhea alveolaris and he quotes Dr. G. V. Black as saying that it ''causes the loss of more teeth than all other combined causes.''

If this review has unduly considered the literature bearing on this subject, its importance must be its justification.

The X-Ray is occupying an increasingly prominent part in current dental literature. It begins to appear that an X-Ray outfit will form part of the equipment of every up-to-date dentist in the not distant future. Already many are finding it an invaluable aid in the treatment of root canals, in the diagnosis of obscure or refractory abscesses, in the detection of punctured roots, protruding broaches, ill-fitting crowns, etc.

Among the many articles on the subject that have appeared during the past year, two should be mentioned. The first by Sidney Lange, M. D., Radiographer to the Cincinnati Hospital, *Items of Interest,* July, 1908, entitled "The X-Rays and Their Applications to Dentistry." The particular interest in this paper is in its general information on the subject of the X-Ray, its nature, limitations, advantages and danger. The second by Dr. M. L. Rhein, in the November *Items,* entitled, "Root Radiography." Dr. Rhein says, "The most beautifully performed dental operations are no compensation for mistakes in diagnosis." Forty-seven illustrations accompany the paper, most of which emphasize this declaration.

The pictures are chiefly of imperfectly filled root canals with resultant alveolar abscesses and the pathologic conditions attendant thereon.

None of us need to study these pictures in order to know how difficult it is to clean and fill many, nay, most, root canals absolutely to the apex, but it will be a surprise and a powerful object lesson to those of us who believe that it makes little difference, anyway, whether the roots are or are not filled to the end. Says Dr. Rhein, "Because you have put in an imperfect root canal filling and the patient does not eventually complain, is no indication that the health of the patient is not being attacked by some form of what we vulgarly speak of as a blind chronic abscess, which is not manifesting any acute symptoms. I have many radiographs demonstrating that improper root canal fillings have been in position for ten or fifteen years, with apparently no bad effects when suddenly most acute inflammatory disturbances are set up involving almost the life of the patient." We have heard from time immemorial of the dentist who says to his patient, "Oh, that's only a gum boil, don't worry about that," but we know that the patient is absorbing poison into his system, a poison that will break down the strongest constitution. As you will see from the pictures I have shown you there is absolutely no assurance of the tooth remaining healthy unless you reach the end of the root. It is far better, it is far safer, to go back to the extraction of teeth than to run the risk of imperfect root filling. The pictures demonstrated how rarely, even under costly crowns and bridges, the root canals are properly filled, and also Dr. Rhein's method of handling different cases. He opens the canals as far as possible, applies his medicament, sodium and potassium, and inserts a fine gold wire as far as it will go. He then takes a radiograph of the tooth and the wire indicates the progress made. By this means he is enabled to tell to a certainty just what he is doing, which is otherwise largely guesswork. Dr. Rhein asserts and his pictures support his assertion, that aseptic gutta percha forced through the root apex into the periapical space is non-irritating. "It is more important that the gutta percha should pass to or run through the end than that any part of the root should not be filled."

From the paper, "Silicious Cements," *Dental Review,* June, 1909, by Dr. W. V. B. Ames, who on the subject of dental cements writes with authority, the following nine points are gleaned:

1. In cavity preparation for silicate cement, instead of "extension for prevention," any bit of enamel that does not render impossible the

proper cleansing of the cavity, and that does not yield a cavity margin too grotesque, should be retained.

2. Silicious Cements are excellent conductors of thermal changes, therefore a non-conductor is often called for. Oxychlorid of zinc is recommended.

3. The cement should be mixed with a non-corrosive spatula, agate preferably.

4. It may usually be inserted with steel instruments packing with an end thrust only. In burnishing with steel instruments thin celluloid should intervene between burnisher and cement.

5. Vaseline is an abomination, use paraffine instead. It may be employed by drawing the strip or revolving the disk upon a lump of paraffine.

6. Applied hot to the newly formed filling, paraffine acts as a neutralizing agent, hastens the setting and gives better results in a shorter time.

7. Many failures result from disturbing the cement after crystalization has well begun. It should be packed quickly and with as little manipulation as possible, with the application of heat the setting should be hastened as rapidly as is consistent with the comfort of the patient.

8. The time has passed for cutting back radically the enamel margins about a small proximal cavity for the insertion of a porcelain inlay, and for the management of labial and buccal cavities, these cements when free of the tendency to shrinkage and discoloration, are almost ideal.

9. Shrinkage, with the best materials, has been eliminated. Discoloration is still a serious fault.

He quotes, without comment, the warning of Dr. A. C. Brewer, March, 1909, *Cosmos*, to the profession that these cements are untried, and that a large percentage are unreliable or worthless.

Prophylaxis, the education of the public in oral hygiene, examination of the teeth of school children and the establishment of free dental clinics are subjects assuming a world-wide interest and which find large space in our dental magazines. These subjects will doubtless be considered at length in the report of the Secretary of the Committee on Oral Hygiene.

One phase of the subject, however, the report of the Committee on Scientific Research, of the Dental Society of the State of New York, on this investigation into the causes influencing immunity and susceptibility to dental caries, may be briefly noted here.

Investigations by the Committee substantiate the findings of its former Chairman, Dr. Low, that potassium sulfocyanate, a normal constituent of the saliva, is deficient in the saliva of individuals during periods of susceptibility to dental caries, and that its administration (K. C. N. S. half grain daily) has a high prophylactic value.

The Committee is continuing the work and this year hopes to find just how this influence of K. C. N. S. is exerted.—*Cosmos*, December, 1908.

As a side light to the investigation the correspondent of the same society, Dr. Henry C. Ferris addressed letters to sixty of the leading pathologists and bacteriologists of the world, asking:

1. Has the normal salivary secretion any inherent antiseptic quality?
2. If it has, to what component part or parts do you attribute this action?
3. What forms of bacteria are affected?

Fourteen of his replies are published. Of these, four, including those of Drs. G. V. Black and Edward C. Kirk, answer to question one, emphatically, no.

Four others say they don't know.

Four others think it probable, and two answer in the affirmative.

From which it will be seen that there is still pioneer work ahead of the Committee before it solves the whole problem.

The report, *Cosmos,* December, 1908, is highly interesting and valuable, especially the replies of Drs. Black and Kirk.

The former says that the same bacteria abound equally in the mouths of immunes and susceptibles, but that in the former their action is in some way neutralized, while Dr. Kirk believes the essential difference is found in a soluble carbohydrate present in the saliva of susceptibles and forming a favorable pabulum for bacterial development.

This report is already too long, therefore without further comment, I thank you.

REPORT ON DENTAL SCIENCE AND LITERATURE*

By H. E. Strain, D. D. S., Chairman Committee, Bloomington, Ind.

SCIENCE, says a writer, may be defined as logically arranged and systematical knowledge, which consists of facts, carefully ascertained, accurately verified and logically put together into a system. Another recent writer says, "In a measure, dentistry is regarded as an exact science, so far as the term is applied to the filling of teeth, the extraction of the same and in the making of plates and bridges, but as to the prevention of decay, or to the loss of the dental organs, due to certain systemic conditions, the dentist has no real practical rule to follow." We all agree, that so far as possible, each of us should conduct his practice on a scientific basis, that is according to verified rules, which have been worked out and proved by a few untiring workers.

To illustrate, Dr. Prothero, of Chicago, taking up the investigation where some of his worthy predecessors have left off, has worked out a system of constructing artificial dentures, beginning with the impression and ending with the finished plate in the mouth of a pleased patient, that is so exact in all the details that the mechanical is almost lost in the scientific. Many of us have seen Dr. Prothero illustrate and explain his method of procedure. After having seen his method illustrated and explained, and admitted to ourselves that up to the present there is none better, yet do we follow the rules that have been so carefully worked out by this untiring investigator. Are we too lazy or too mercenary? If we will only take time to think about these things we will readily see that we can make more money with less labor, and give our patients better service by following him, than we can by following our old slipshod methods.

---

*Read before the Indiana State Dental Society, 1909.

Dr. Bowles says in the April number of THE DENTAL SUMMARY, "that there is no danger of the mechanical side of dentistry being neglected, but that it is the theoretical and scientific side that the average member of the profession neglects." Dr. Bowles is right in one sense, yet we believe that if a man neglects the theoretical and scientific side, he will not be as proficient in the mechanical work of the profession as he should be. A man may spend a few months under a preceptor and his three years in a dental college and go out into the world to conduct a practice; if his school days end his days of study he will plod along in the same old rut, making plates and fillings in the same old way regardless of the advancement made by his competitors. If we would construct a plate, insert a filling or clean the teeth in such a way as to satisfy the patient and please her friends and direct the great throng in need of dental services to our doors, we must sit at the feet of such men as Dr. Black, Dr. Prothero, Dr. Smith and all others who have helped to lift dentistry from an humble calling to an honored profession.

It is not our purpose in this report to deal with the scientific side of the subject, but to call your attention to some of the papers and reports appearing in our dental journals of the last few months. We never pick up a journal these days that does not contain an article or at least some mention of the cast gold inlay, and it is well that these articles should appear, as the inlay is a great boon to the profession, and by its use we will save many teeth that would otherwise have to be saved by crowning. However, if we possess ordinary manipulative skill we can, in a measure at least, please ourselves and satisfy the patient in the making and placing of this class of work. There are articles appearing just as often, on other subjects, in the investigation of which, as yet, if we follow the writers themselves and note the conclusions at which they arrive, we must conclude that we have not found common ground upon which to stand. The disorders, of which the articles to which we will call your attention treat, are erosion and pyorrhea alveolaris, especially the latter. Dr. Edward C. Kirk, of Philadelphia, in a paper read before the union meeting of the "Maryland State Dental Association" and "The District of Columbia Dental Society," entitled the "Constitutional Element in Certain Dental Disorders," says, in speaking of "pyorrhea alveolaris, interstitial gingivitis, Riggs disease, etc., " it has long been observed that these alveolar lesions are manifested in individuals below the normal standard of health, those in whom errors of nutrition in varying degrees are evident, but while the clinical fact of the coincident malnutrition has been noted, the tendency has been to attribute the depressed state of the health to the alveolar infection rather than to regard the local alveolar disease as an expression of a general nutritional fault, manifested as a terminal infection.'' He also says, ''the alveolar disease in its turn contributes to the general disturbance of nutrition, but that the invasion of the alveolar structures was made possible by the lowering of the standard of vital resistance of the tissues of the individual, by reason of some pre-existing nutritional fault. If we admit the predisposing constitutional factor, it is evident that the therapeutics of this group of diseases must also include careful attention to those systemic states in which susceptibility to these diseases is markedly evident, if we are to entertain the hope of intelligently and permanently curing the same.'' Dr. D. D. Smith, also of Philadelphia, says in an article in THE DENTAL SUMMARY, ''the real cause of oral pyorrhea is a neglected state of the secretions, exudates, and debris in the human mouth.''

Systemic diseases never develop oral pyorrhea, but conversely oral pyorrhea may and does develop and sustain grave disorders, that have not hitherto been suspected, in this connection. The exciting cause of pyorrhea is a positive septic local irritant upon or in association with the roots of the teeth, this septic irritant may be a solid, a semi-solid or masses of mucilaginous debris gathered from mouth fluids. Here we have statements from two prominent men of our profession, seemingly contradicting each other. We recognize Dr. Kirk as one of the leading men of the profession, and we know that Dr. Smith has probably done more to advance oral prophylaxis than any other man. When such men as these differ we wonder whether or not we are advancing as rapidly as we might in the treatment of these diseases. Other articles and papers do not seem to make the subject any clearer.

In a review of a paper in the 1908 November *Cosmos* are these words: ''The truth of the matter is that the causes are many or rather many are the conditions in the economy which gives rise to the disturbances in the tissues about the roots of the teeth, that it is a local expression of a systemic disorder seems the best solution and this is the opinion reached by many of our best observers. In a very interesting paper by Dr. Talbot, of Chicago, on interstitial gingivitis due to auto-intoxication, he outlines his treatment, which is mainly to clean up the mouth, to clean up the system generally. After the preliminary treatment, if the patient is well to do, prescribe a change, send him to the sea shore, to the mountains, north or south, anyway, send him somewhere. If the patient is poor, after the preliminary treatment, then what? Ah, doctor! it is unfortunate and very inconvenient to be poor, to which fact some of us can testify. Dr. I. N. Broomell says, in a paper in the *Dental Cosmos* some two years since, ''I believe that incipient cases of pyorrhea alveolaris can be successfully treated, but in those cases in which the disease has advanced to what might be termed organic proportions, the fibrous elements so essential to tooth support are lost. I would say as yet no treatment is available by which teeth thus affected can be restored to a normal condition.'' He also says, ''as the subject now stands there are three separate and distinct views regarding the cause of pyorrhea alveolaris, any one of which may be right, likewise all may be wrong; they are 'constitutional of some kind,' 'local of some kind,' or 'infectious of some kind.' We seem to have almost as many different opinions regarding the cause and treatment of this disease as we have writers in the profession."

It is not our purpose to speak of the merits of any of the papers on this disease, but to call your attention to the fact that we seem to be making little progress along these lines. In a paper by H. E. Belden, of New Orleans, La., appearing in the *Dental Digest*, Sept., 1908, concerning the cure of pyorrhea alveolaris, he quotes Dr. Talbot, who says, "I questioned a pyorrhea alveolaris specialist of national reputation quite a good deal in regard to the habits of his patients after he had cured the gums as he claimed to do. I found that every patient had to come back as often sometimes as every two months, sometimes four times a year, and sometimes twice a year to have their gums treated again. This answers the question, they were benefited, but not cured. Broomell says a writer of considerable note made the following statement as early as 1846, "The gums are subject to several diseases peculiar to themselves, besides other affections which may be considered as the index of a constitutional derangement, the nature of which is somewhat mysterious. "The alveoli of the teeth have also their distinct diseases and are liable to be affected by diseases of the constitution." We have given the disease a name or rather a number of names, beyond this we know but very little more than did the writer of 1846. How are we to arrive at a more definite understanding of this grave disorder?

Some one has recommended the establishment of a bureau of hygiene under some department of the government. The Louisiana Dental Society has framed a list of questions and sent them to the various associations, to be answered and returned, to see if they can get information to help solve the problem. There is a better method, we think, not original with us, and that is for the various associations to establish a laboratory for research work and put it in charge of a corps of competent investigators. Support it by assessing the members of the various state associations, the cost to each individual member would be small, but the benefit derived by the profession and the public from a laboratory so equipped would no doubt be very great.

One other thing we will mention, and that is the literature, or rather the lack of literature in our public schools in regard to the teeth and their care. There is no reason why the child should not be taught, and many reasons why he should be taught oral hygiene. To a very great extent the development of the child physically, morally and mentally depends upon the care of the teeth and the proper use of the same in preparing the food for digestion and assimilation. This being true let us exert our influence to secure a proper course of study in hygiene, and especially oral hygiene, for our boys and girls in our public schools. Let us see that dentists and not physicians inspect the teeth of the school children. Let us see to it that the state looks after the care of the teeth of the children whose parents are too poor to have it done for them. If we can bring these things about we will benefit the individual, the state and the nation, for the strength of the nation depends upon the strength of the individual, and the health and the strength of the individual depends to a very, very great degree upon the proper care and use of his teeth.

A BASE FOR A RICHMOND CROWN*

By James E. Boyd, D. D. S., Cincinnati, O.

THIS crown base was intended for porcelain, but can be used equally well for gold. First, prepare the root in the usual way, except in front, where you cut it sufficiently short to allow the gum to entirely cover the joint. Prepare the canal to receive a Logan crown pin, making it fit perfectly, or so that it will require some force to remove it. Then take a piece of platinum plate (33 gauge) sufficiently large to extend over the margin of the root to bend down to make the band, punch a hole near the center and force the pin through it and burnish until it conforms to the exposed end of the root, having the pin in position, remove them both together and solder with pure gold. Then put it back in position and with a large plugger in the automatic mallet drive the platinum disk down against the root until you have outlined the exact size of the root on the under side of the disk. Remove, and with a pair of plate shears cut a number of slits from the periphery of the disk to the outline of the root, and with a small pair of flat-nosed pliers bend the slit edge of the disk to form the band, allowing the slits to overlap each other. Place it back in position and with a large foot plugger in the automatic mallet drive the partially formed band close around the root. Remove again and with a wheel on the engine grind the overlapped edge of the band to a feather edge; then take a strip of platinum plate (36 gauge), just as wide as you are making the band, and with a pair of pliers hold the center of the strip against the palatine or back portion of the feather edge band and solder together at that point with pure gold. Then, with the fingers, press the ends of the strip down close around the sides of the band, holding in position while soldering. This strip and gold not only reinforces, but restores the lost form of the root and when properly executed, makes a perfect fitting base for a crown.

*Given as a clinic before the Ohio State Dental Society, Dec., 1909.

INDEXING AND CLASSIFYING DENTAL LITERATURE*

By Charles Shepard Fuller, D. D. S., New Orleans, La.

THE thoughts embodied in this essay are in no wise my own, they having come from a much wiser head, and originally appeared in one of our journals, written by the pen of one whose name I have forgotten and cannot find, owing to not having a system at that time. I had long been thinking of ways and means to the same end, and this doctor's suggestion seemed so pregnant with good results that I immediately adopted his system, much to my pleasure and satisfaction.

It is perhaps a misfortune that much of the very best thought of our profession appears in the form of short essays in our current journals, where it is very apt to meet the fate of oblivion in one of two ways. The average man, after reading his journals, either casts them into the waste-basket or places them on file in some part of his office to gather dust.

In nearly every journal at least *one* article or idea may be found that meets our individual wants, but in the rush of a busy life many of these important facts are forgotten, which later we would fain have remembered. The time comes when we have urgent need of that information, but the party who cast his journal into the waste-basket, because he did not wish to save a whole magazine, advertising and all, just for one article, the salient points of which he thought he could remember, may look in vain—it is lost forever.

The party who saved his journals, as dust catchers, is, on the other hand, confronted with an immediately and stupendously discouraging task. To begin with, he is unable to recall in which month of which year, or in which one of the half-dozen journals he subscribes to, the much-needed article is hiding, and to go through them all is so laborious and dirty a task and consumes so much time, that he is very seriously tempted to throw up the job and get along as best he can. Should he make the search, likely as not the very journal he wants has disappeared.

The binding of journals is a constant expense and they take up a lot of room and require almost the same waste of time to find the needed article. Incidentally an awful lot of nonsense and trash has been saved for the privilege of keeping a few really good articles. Why not put the system into operation as follows:

Purchase a vertical letter-file—these may be had, folders, guides and all complete, for as little as $1.50. Then each month as you read your journals, mark the important article, and when finished, open the binding and take out the pages containing said article, fasten them together and file under proper heading.

For instance, under "A" would be filed Abscess, Artificial Dentures, etc., each in its own folder, that is, all the articles under Abscess, which might number six, would be in one folder and those under Artificial Dentures in another, each having its tab engrossed with the proper heading and filed under the alphabetical caption "A."

---

*Read before the Louisiana State Dental Society, 1909.

Under "B" would come articles relative to Bridge-Work—fixed bridges in one folder and articles relative to removable bridges in another folder, each folder having its tab engrossed with the proper heading and filed under the alphabetical caption "B." Under "C" would come Crowns, Cements, etc., and so on through the alphabet.

In this way you would save *only* those articles you wanted—refine the gold from the dross—and economize much space, but even then this system would in time become cumbersome, unless a systematic weeding out took place now and then, which would be easily done, too, in this way. Occasionally you find an article on a subject that completely and thoroughly covers a given subject to your entire satisfaction, or one which, by being more up-to-date and modern, makes your previous collection on the subject superfluous and behind the times; throw them away and keep only the modern, condensed article and thus save time and space, also adding to the accessability of what you need.

Now, suppose a case presents that is obscure or difficult; it is but the work of a moment to locate a comprehensive dissertation on the subject, which may, perhaps, enable you to do something at once, instead of being forced to delay for a time to get up all the necessary data on the subject.

Suppose you wish to write a paper touching on one or several subjects, and you need to brush up a little—the information necessary is right at hand. You can quickly verify your own ideas and perchance catch a new one. Suppose you wish to study some particular subject—the accessability of the data is a stimulant to do so and the system thus becomes an educator.

To sum up the advantages of this system, you are saving and preserving the things you paid for. You have only the *valuable* articles on a given subject, unencumbered by useless literature and advertising. Great economy of space is attained and the preservation of data against dust, loss and destruction. You have the very greatest possible accessability to any data on any dental subject. It is educational because accessability stimulates more study. Essay and discussion writing are made easier owing to accessability of data, which makes for the benefit of your dental society. It becomes a great time saver and ends by becoming a Dental Encyclopedia of great magnitude containing the best thoughts of the most learned men in the profession, provided, of course, that the literature has been well chosen.

I trust this subject has been and will be of interest to you and may help to solve what has until now been a hard problem—that ot saving the magazines you have paid for and then finding what article you need in the least possible time and with the least possible trouble. If I shall have helped to start only one on an easier path I shall feel repaid.

GRINDING GUM SECTIONS *

By Dr. J. O. Hawkins, Wellston, Ohio.

GRINDING "gum sections" is almost a lost art in prosthetic dentistry. When I began to study dentistry, thirty years ago, all permanent sets of teeth were made by using gum teeth. Plain teeth were used only for temporary work. In fact, all of the old line dentists did not think of using plain teeth for permanent work, and only looked upon them for work until the gums would absorb enough to use gum sections. Gum sections had their inception way back 50 or 60 years ago when the old line dentist carved his own block teeth, and all the teeth he used were the product of his own handiwork. Of course he had to be a master of the prosthetic art in order to do this, and grinding gum teeth was just as easy for him as it is for a young dentist of this age to set up a set of plain teeth. It is no wonder to me that our young dentists do not know how to make a set of gum teeth, for I understand that they are not taught how to grind them at college; and I presume they are not taught this art because their preceptors do not know how, and tell the students that the gum tooth has gone out of use, and it is not necessary to learn to do this class of work. I asked quite a number of the younger dentists at our last meeting why they could not make gum teeth, and they all said they were not taught how in college. This is almost a lost art, and I am afraid that contour gold filling will be another lost art in a few years if the "inlay" agitation is kept up as it is now being done. It will not be long before a young dentist will not try to put in a hand filling, but will put in some kind of an inlay, and cement it to place. I think that every student should be taught how to grind gum teeth, for I do not see how any dentist can successfully practice prosthetic dentistry without knowing how to do this class of work, as I will proceed to show.

Gum teeth have decided advantages over plain teeth in cases where the patient, either because of the shortness of the upper lip, or through habit, exposes the gum to any considerable extent in speaking or laughing. *Porcelain excels anything else ever used in its capacity of imitating gum tissue.* Gum color can be exactly reproduced, and the resemblance is intensified when the porcelain gum is moistened with the saliva of the mouth, which gives it a flesh-like texture difficult to distinguish from the natural gum. This is one of the great advantages that the gum teeth have over the plain teeth. There is no pink rubber that will not fade and look rusty and nasty in a few years. In a case of the short upper lip, and a showing of the alveolar process, if plain teeth are used with pink rubber, every time the patient laughs, of course, the pink rubber shows, and in a few years the rubber will fade, and you then have a very unsightly set of teeth. You see them every day, and will continue to see them unless this "lost art" is again taught in our dental colleges. Of course, there must be more absorption of the alveolar process to use gum teeth, and it may be necessary to use a temporary set of plain teeth first, in such cases as I have mentioned above, until the process goes down sufficiently so you can use the gum teeth. The gum teeth take up more room than the plain teeth, on account of the porcelain gum. This is just the reason that all of the old line dentists used the plain teeth for temporary work—simply because they could not use the gum teeth on account of the fullness of the process. I did not have the advantage of a college dental education, but I put in three years in an office, most of which time was devoted to grinding gum teeth, and I presume if I had gone to a dental college, I would not have learned how to make *good teeth*, for I consider a set of gum sections, properly made, the best set of teeth a dentist can put up.

---

*Given as a clinic before the Ohio State Dental Society, Dec., 1909.

What can be said of the durability of the gum section? Will the gum teeth make a more durable set of teeth than the plain teeth will? Time and experience will tell the story. I have in my office a full upper and lower set of gum teeth, on vulcanite, that my mother wore for 30 years, and there is not a check, crack or any defect whatever in them. These were made for my mother when she was thin in flesh, and as she grew older, the plates did not fill out the mouth sufficiently, because she took on flesh and became quite fleshy, as she grew older. Some three years ago, I made her a new set of teeth and I kept her old ones to show how good work will stand. Within the last hunting season I visited Mr. Baker Lee, near McArthur, Ohio, for whose wife I made a set of gum teeth the first year I practiced dentistry, 26 years ago. Mrs. Lee took great pleasure in showing me this set of teeth, which was just as perfect as the day it was made. She said that she had never spent a penny having the plate or teeth repaired. Mrs. John Brown, who lives at Hamden, Ohio, is now wearing the first full upper and lower set of teeth that I put up (gum teeth), 26 years ago, and has never spent a cent for repairs on them. Dr. Boggess, who died at Greenfield a few years ago, practiced dentistry in my territory 40 years ago, and he was an expert in making gum teeth. There is hardly a week that I do not see some of his plates that have been doing service for 25 or 30 years without a blemish. I cite these cases to show that the plain teeth are not nearly so durable as the gum teeth. My observation has been that the old gum teeth, with platinum pins, are the best teeth ever made, and I think the quicker we get back to using them, and charge what it is worth to make them, the better satisfaction our work will give. Thirty and forty years ago the old dentists used to charge $25.00 and $30.00 for a set of teeth, using the gum teeth. Now you can get a set of *something* for $3.00 to $10.00, and the extracting thrown in for good measure. This class of work has been the ruination and the destruction of the natural teeth. The most appropriate thing that could be done, for the people at large, would be for the dentists all to get together and agree not to make a set of teeth for less than $50.00 and stick to the agreement. People would then take care of the natural teeth.

When I am making a full upper and lower set for the same person, and I want to use the gum teeth above, I grind my gum sections, and set them where I want them to go to give the proper effect, and then use plain teeth for the lower set and bring them up to the upper set. You then have a splendid job of work. I never use gum teeth for lower sets, because the lower process or gum seldom shows, and I can make a nicer job and do it quicker than I can if I use gum teeth. I have not ground up a lower set of gum teeth for ten years, and probably never will again.

The gum teeth are much harder to make than the plain teeth; but anyone who has skill enough to make a good piece of bridge work, or make a good crown, should be able to make a good set of gum sections. I will now tell you how I succeed in making gum teeth, and if you will follow out my directions you will not fail: The first thing you need is a good, true running lathe, with two carborundum wheels, one coarse for heavy cutting, and one fine for finishing up the joints. Grind the labial part of the joint perfectly as possible, but leave the lingual part slightly "v" shaped so you can run some cement, or plaster and liquid silex in, in order to fill the joint perfectly so as to keep out all rubber in vulcanizing. After you have gotten your joints ground perfectly, the question now is how will you keep them this way; or how will you keep them from spreading in vulcanizing? Do not put any hot water about your flask from start to finish. The idea is to keep the plaster in the flask just as hard as possible. Warm the flask with dry heat to get the wax base plate out. You will soon learn by the warmth of the flask when the wax is warm enough to leave the pin heads, and it will pull out clean, and you will not need any hot water to melt out the wax. If any melted wax gets into the joints, they will be dark. After the wax is all out, then fill in the "v" shaped spaces, and warm up with dry heat for packing. I use Samson Rubber and Doherty's Pure Black Rubber, because they are the easiest rubbers to pack that is made. It is well before packing to cut a few "waste ways," in order to let out any surplus rubber, if you have any. Warm up the flask with dry heat, and pack the rubber carefully, and then take a piece of the muslin that comes over the rubber and put it on the model, and close the flask with dry heat. After the flask comes together nicely without too much force, separate it and take out the muslin, and tin foil the model, and close the flask finally. This should be done without a flask press, and without much force, so as not to spread the joints. In vulcanizing, set the flask up out of the water by putting a small tin box, or something similar, in the bottom of the vulcanizer, and vulcanize by steam heat. The idea is to keep the plaster in the flask just as hard as possible. This accomplishes two things: it makes a better fitting plate, and it prevents the joints from spreading. If these directions are carried out, the plaster will come out of the vulcanizer so hard that you can hardly cut it.

In concluding this article, I wish to say that I do not condemn plain teeth. I use more of them than I do gum teeth. What I want to convey to the profession is that gum teeth have a place in prosthetic dentistry, now just as they did 50 years ago, and should be used wherever applicable.

CONSTITUTIONAL TREATMENT OF DENTAL DISEASES*

By W. H. O. McGehee, M. D., D. D. S., Richmond, Va.

ON page 470 of Johnson's new work on Operative Dentistry may be found the following words, written by Dr. John Deans Patterson, in summing up the treatment of pyorrhea alveolaris, viz.:

"When Pyorrhea is accompanied with any predisposition, whether hereditary or acquired, which lends to the virulence of the disease, such systemic treatment should always be relegated to the patient's medical adviser. It is a breach of ethics if the doctor of dental surgery invades the general field of medicinal treatment by the administration of internal remedies for the correction of faulty metabolism or systemic conditions from whatever cause."

These words, coming from so authoritative a source, and from the pen of a man who teaches Dental Pathology and Therapeutics in one of the most prominent schools in the West, either do not express the eminent doctor's real position in the matter or evidence what appears to me to be a very narrow view of the scope and breadth of dentistry as a profession. They infer, as I understand them, that the dentist is legitimately entitled to apply local treatment for those conditions arising in his daily practice, but, when constitutional treatment becomes necessary, he must seek the aid of the general practitioner.

The oral cavity is an integral part of the human anatomy and as such, has intimate relationships, nervous, vascular, lymphatic and otherwise with the other parts of the body. All of the tissues of the mouth, including the mucous membranes, the bones, muscles, ligaments, glands, teeth and other structures, are subject to diseases in which the constitutional element is concerned, sometimes largely, sometimes minutely in their production.

Such diseases as abrasion, erosion, caries, the various constructive and destructive diseases of the dental pulp, alveolo-dental abscess, gingivitis, pyorrhea alveolaris, syphilis of the mouth, stomatitis; in fact, practically all of the diseases with which the dentist has to deal occasionally or frequently have a constitutional element more or less intimately concerned in either their production or treatment. I desire to make the broad statement, then, without fear of contradiction, that there is practically no pathologic condition which the dentist is called upon to treat in which systemic medication in addition to local treatment, will not only hasten the cure or prevent the recurrence of the disorder, but will be often demanded. Of course, in some cases of the diseases mentioned constitutional medication will not be deemed necessary or even advisable, but as a general proposition the dictum laid down will stand.

Taking this as a premise then the question arises who is to administer the systemic treatment? It is just at this point that I take issue with the distinguished author mentioned above. It is true that the majority of men in the practice of dentistry today, certainly the great mass of the older practitioners, are not equipped to attempt systemic treatment of many of the diseases with which they come in contact, owing to two causes—one of these is deficient early training as to a knowledge of the pathogenesis of disease processes and of the armamentarium with which to combat the conditions from a medical standpoint. The other is the sad fact that they do not read and investigate this important side of the profession, and this latter criticism is intended for the younger members in our midst, as well as the older ones.

---

*Read before the Virginia State Dental Society, 1909.

But dental education has made rapid strides in the past decade, especially since the establishment of comprehensive courses in dental pathology and therapeutics in the schools, built on the firm foundation of an extensive knowledge of anatomy, histology, physiology, chemistry and the fundamental medical branches. I can safely say that most of the reputable dental schools in this country are turning out men with a pretty thorough knowledge of the close connection between oral pathogenic processes and general systemic conditions as well as at least a fair knowledge of materia medica and prescription writing.

Certainly the school with which I have had the honor of being connected as a teacher for twelve years gives the young men going out year by year from her doors an adequate knowledge of how to combat the systemic conditions which predispose or actively produce the various dental disorders as far as they are understood today.

Some may argue that the general practitioner of medicine, owing to his more extended experience in daily practice, is better equipped to handle these cases from a medical standpoint. We will have to admit that taking this as a general proposition, the statement is true and, in many instances, where the hearty co-operation of the family physician may be obtained, better results may often be accomplished in the final cure of cases; and this is the procedure which the writer would advocate, in many instances. But often the physician does not understand the local conditions present, and does not realize the importance of constitutional treatment. This being the case, then, I maintain that the dentist should not only be prepared to advise the proper courses of procedure, but should at once institute them whenever he deems necessary.

The surgical specialist, the oculist, the otologist, the obstetrician, and men engaged in other specialties of general medicine frequently call into consultation the general practitioner for aid in the constitutional treatment of grave cases, but in many instances these specialists do not hesitate to administer drugs for the relief of systemic conditions concerned in the production of the diseases which they are called upon to treat. Let us then, ask ourselves this question: Have not we, as specialists in the treatment of oral diseases, the same right as other specialists? The correct answer to the question is obvious.

Indeed, the welfare of the patient frequently demands that we take the medicinal treatment of these cases in our own hands. The medical courses in the colleges in this country are notoriously deficient as far as the teaching of oral diseases is concerned, and physicians are not only sadly ignorant, but many of them appear utterly indifferent to the subject. Some of my best friends are members of the medical fraternity and this criticism may appear to them somewhat harsh; but it is, nevertheless, true.

The constitutional element in many of these diseases has been in the past, and is now being worked out by eminent men in the dental profession. Very interesting and instructive reading along this line may be found in the following articles recently published, this being on account of only a small portion of the work which is being done at the present time, viz.: "The Blue Ray in Therapeutic Dentistry," W. J. Hodson (*Dental Cosmos*, vol. 49, No. 8, page 824); "Lymphatic Stimulation in Dental Practice," H. J. Allen (*Cosmos*, Vol. 49, No. 3, page 305); Saliva and Tooth Decay," J. W. Beach (*Cosmos*, Vol. 50, No. 5, page 469); "Rational Treatment of Putrescent Pulps and Their Sequelae," J. P. Buckley (*Dental Digest*, Vol. 12, No. 6, page 618), and other valuable contributions by the same author; "Pyorrhea Alveolaris," A. H. Merritt (*Cosmos*, Vol. 51, No. 1, page 44); "Treatment of Interstitial Gingivitis," Talbot (Vol. 51, No. 2, page 153), and others too numerous to mention.

Some of my hearers may say that the remarks contained in this paper are an argument for the establishment of the M. D. degree for dentists in Virginia. I do not intend them to be construed as such. Most of you are aware of my position in that matter. My friend, Dr. F. W. Stiff, struck the key-note to that situation in his paper advocating the establishment of elective courses in the medical schools. If this could be accomplished, and time alone can do that, dentistry will then be taught as an elective. Even then, very few changes will be necessary in the dental course, as at present taught in the leading schools.

The "consummation devoutly to be wished" is that the dental profession will awaken to the fact that they are working on living tissues, intimately connected with the general system and subject to diseases in which constitutional conditions are largely concerned and in which constitutional, as well as local treatment, is frequently absolutely necessary, and then be not only prepared, but anxious to adopt these systemic measures when occasion demands.

IT is absurd for a man to say that he despises men, but loves and honors humanity. A humanity worthy of honor and love without men who are worthy of honor and love, is a fiction, a thing that has no existence.

—*Jacobi.*

PRESIDENT'S ADDRESS *

By Dr. H. J. Feltus, D. D. S., Baton Rouge, La.

As president of this honorable body, it becomes my pleasant duty to bid you welcome to this the thirty-first annual meeting of the Louisiana State Dental Society, and it is also part of my modest role to give you fraternal admonition and friendly suggestions.

Hippocrates, the father of medicine, banished demonology and conceived disease as due to natural causes. Claudius Galenus, commonly known as Galen, was the last great scientist of the Alexandrian school, a man whose fame was destined to eclipse that of all other physicians of antiquity except Hippocrates, and whose doctrines were to have the same force in their field throughout the Middle Ages that the doctrines of Aristotle has for physical science.

Among the early pages of history, there is one that tells the story of the greatest of the pagan lawyers, Papinian, who, when Caracalla murdered his own brother, refused the emperor's request that he, Papinian, prepare a brief in the emperor's defense. Rather than obey he chose to die.

In our own chosen profession, we find inscribed high upon the scroll-of-fame, such names as Fauchard, Lemair, Barnum, Hayden, Harris, Tomes, Bonwill, Morrisen, Garretson, Horace Wells, Morton, the late W. D. Miller, and this list is not complete without the name of the venerable and much beloved G. V. Black. The genius of these men illumines the entire dental horizon. These master minds did not seek the applause of the multitude, but the unselfish motives that inspired them was to render to the world and its people the greatest service. May these same motives, these same ideals, ever inspire us. For as Carlyle said, "What does it matter whether the ideal be made of this stuff or that, so long as the form we give it be heroic;" as professional men we must devote our hearts and heads to the uplifting of our profession. Let us then, work, and as Emerson says "hitch our wagon to a star." And take advantage of that "Opportunity" as beautifully expressed by the poet who says—

> "They do me wrong who say I come no more
> When once I knock and fail to find you in;
> For every day I stand outside your door
> And bid you wake and rise to fight and win."

It is with pride and satisfaction that we reflect on the growth and achievements of our profession. In each succeeding year the advancement of dental science has been marked and has presented in increasing number its innovations and improvements. So rapid has been this progress that books and instruments of today are tomorrow almost out of date. But before congratulating ourselves on the achievements of dental science let us pause for a moment, and ask ourselves—have we individually contributed each his share toward this great work? There are many problems yet to solve in this field of scientific research.

---

*Read before the Louisiana State Dental Society, 1909.

VIOLATION OF THE DENTAL LAW

One of the most important issues before us at this time is the enforcement of the dental law, and the conviction of illegal practitioners of dentistry. From almost every section of the state I have received many letters informing me that the dental law is being openly violated. Soon after my election as president of this Society, I called the State Board of Dentistry's attention to this matter. I also called on the Governor twice in the interest of having the dental law respected.

I need not enlarge upon the fact that the dental law concerns not only the dentist, but all the people. The great value of honest dentistry for the human race can not be overestimated. I recommend that this matter receive your careful consideration at this meeting.

POST-GRADUATE COURSE OF STUDY

I have given this subject much thought and careful study, and I am thoroughly convinced that the plan for a post-graduate course of study as adopted by the Illinois State Dental Society is of great value and importance. I recommend the adoption of the same course with such modifications as may be necessary, and the appointment at once of the proper Committees to carry out this work.

The primary object of the establishment of this Post-Graduate Course is to develop the members of the Society better habits of reading and study, and at the same time arrange the work in such practical form that it will be available and valuable to every man in his daily practice; that one may at the least possible expenditure of time and with little inconvenience get information on almost any question that may arise.

The plan also offers systematic courses to those who may be inclined to read more than the average man. It gives each one the opportunity to look up little or much regarding a particular subject, as he may desire. It presents to our component societies a large variety of topics for discussion and should be the means of adding a new element of interest in the work of these organizations

So much interest has been manifested in this course, not only by the members of the Illinois Society but by many in other states, that it certainly should have our most careful consideration.

THE MILLER MEMORIAL FUND

I am requested by Dr. Truman W. Brophy, the American representative of the International Committee of the International Dental Federation, to bring the matter of the creation of a perpetual memorial to Prof. Dr. Willoughby Dayton Miller, before this society at its regular meeting, and appoint sub-committees or take any other action which will enlist the interest of the members and induce them to subscribe as generally and liberally to the fund as possible.

The splendid example which Prof. Miller has given us of unswerving loyalty to his professional ideal, of unremitting labor for the cause of truth, of high scientific attainment as the natural and logical result of such effort when undertaken and carried on in the spirit of unselfish love for and devotion to our profession's interests was the example which he gave us of a life consecrated to the good of his kind that places him first in our list of immortals.

FIFTH INTERNATIONAL DENTAL CONGRESS

Dr. Burton Lee Thorpe, Secretary, American National Committee on Fifth International Dental Congress, desires that I call your attention to the meeting of the Fifth International Dental Congress to be held in the House of Parliament, Berlin, Germany, August 23rd-28th, 1909.

It is desired that the United States be represented by a large delegation, and I will urge all who can to attend this meeting. A most interesting program is being prepared, and it promises to be the most important meeting held in years.

DENTAL INSPECTION OF SCHOOL CHILDREN AND EDUCATING THE PUBLIC

This subject has been under discussion for several years, and is of such importance as to merit our careful consideration and attention.

The Councillors of the First and Second Districts have been doing some valuable work in this field the past year, but as yet very little has been accomplished in other sections of the state. I recommend that our Society appoint a standing committee to take up this work in districts not already covered.

COMPONENT SOCIETIES

Dr. A. J. Bercier, Councillor 7th Dist., organized the Seventh District Dental Society, at Opelousas, Feb. 12th, 1909. Dr. Bercier deserves much credit for this good work. We now have component societies in all the districts except the Fourth and Fifth. Dr. R. L. Arnold, Councillor for the 4th, reports that a society can be organized in his district without much trouble as there is plenty of good material and an elegant field for a first class society. This society would have been instituted but Dr. Arnold's health has been so bad that he was unable to give the matter any attention; and he has requested that some one be selected to take his place.

Dr. J. F. Johnson, Councillor 5th Dist., does not believe it possible to organize a district society in that section at this time, as there are so many dentists in district that are not ethical. However, I think notwithstanding this adverse report of the Councillor, a society can be instituted there.

CONCLUSION

Before closing I desire to again thank you for the high honor you have conferred upon me in selecting me as your president. Whatever measure of success may have attended my administration and this meeting is due to the hearty co-operation of the Executive Committee, the Paper and Clinic Committee and the Membership Committee, who have at all times put forward their best efforts in the interest of our association, and I wish to express my hearty appreciation of all the courtesies and kindnesses I have received from them.

A SERMON ON SALIVA *

By H. C. Sexton, D. D. S., Shelbyville, Ind.

IN this modern day of fads, some wise, some otherwise, there is one movement, be it fad or not, that has been greatly neglected by the dental profession; a movement, moreover, in which we as dentists should take more than passing interest. I mean the tasting, chewing movement—Fletcherism, as it is called—and it was to that subject and especially to some of its purely dental aspects that my mind reverted when asked to prepare a paper for this meeting.

One medical writer, Dr. Daniel S. Sager, in his book, "The Art of Living in Good Health," says:—

> "We eat or drink for health or ill health. Aside from surgery and midwifery the practice of medicine for the most part revolves about the stomach. While medical science has thousands of names for diseases, at bottom all diseases are alike. Poisonous principles are thrown into the blood and the result is disease. There are several hundred organs and tissues in the body, each one of which, when affected, gives name to a disease; but while the names of diseases are different, yet the cause which produces them is generally the same—overeating, which produces auto-intoxication, self-poisoning, malassimilation, premature old age or disease—call it what you will. The conditions which produce Bright's disease will also produce gout, rheumatism, cancer, or appendicitis."

This is certainly advanced ground, yet after due consideration who will say that Dr. Sager has not weighty evidence to support him in his assertions?

The length of an animal's life, so naturalists tell us, is five times its period of growth. Thus the dog is full grown in two years and lives to be ten; the horse full grown at five lives to be twenty-five. Applying the same rule to man who is full grown at twenty we find he should naturally live to be one hundred. Yet not one in thousands does and for it there must be a cause.

Herbert Spencer in his epoch-making book, "Education," said:—"The first requisite to success in life is to be a good animal; and to be a nation of good animals is the first condition to national prosperity."

The average man today, especially if he be one of those mortals whose waist measure is larger than his chest measure, will, without much hesitation, acknowledge that he eats both too much and too fast. Now, when this average man bolts too much food, what becomes of the unnecessary, unchewed, unsalivated surplus? Our modern birds have no teeth and gulp their food whole, but nature has provided for them a gizzard capable of grinding up what they swallow; we, however, have no gizzard, our stomachs can do much churning but no grinding, consequently our teeth must be used for that purpose or it is never accomplished. The digestive juices are unable to take care of unmasticated food so that when swallowed in that condition it ferments or putrifies, according to whether it be the carbohydrates or proteids, and throws off poisonous acids and gases that the body must dispose of or die. Thus the eliminating organs, the bowels, kidneys, and skin are overworked, eventually the machinery of the body becomes clogged, and then comes disease.

---

*Read before the Indiana State Dental Association, June, 1909.

In this way can we understand Herbert Spencer. In this way is the education of the average man, woman and child sadly neglected. They have never been taught to eat; never been taught to use their teeth and their saliva. Thus they fail to make of themselves good animals. Thus are they handicapped in life's struggle.

Now the advice of chew, chew, chew, has been given for ages—given and disregarded as is most good advice in this world, by the way. It was the hobby of Gladstone who instructed his children to take thirty-two distinct chews at each bite. Why thirty-two nobody knew unless it was to give one chew for each foot of alimentary canal. Horace Fletcher goes one step back of the chewing process. He says never eat when worried or hurried, and at all times taste, taste, taste. To taste you must chew, passing the food over the sensitive taste buds on the end of the tongue. Taste until all taste is gone, by that time the food is liquid and slips down the throat without any conscious effort at swallowing. It is not the mass of the food that satisfies nearly as much as the taste of it. The taste is the criterion. Taste all the taste out of food and you are then satisfied with one-half the quantity and get more strength, energy, and vitality out of that half than you formerly did out of the whole, and moreover, you do not burden your eliminating organs. Live clean, says Fletcher, inside as well as outside; don't bolt your food without forming even a speaking acquaintance with it, and your body will be the body of a healthy animal.

Have you ever seen one of those giant crushers of ore, called stamping machines, at the gold mines out West? The ore is thrown in, the machine set in motion, and with a noise of thunder the crushing proceeds until that ore is turned out fine sand. This fine sand, cyanide of mercury, or whatever chemical is used, can attack and take therefrom all the gold. Had the chemical been used on the ore before it passed through the crushing machine not one fiftieth of the value would have been extracted.

Now, in view of this, if a mine owner should grow lazy and dispense with the use of his stamping machine, would not all the world proclaim him a fool? If such a man were a fool when only his pocketbook were at stake what should we call the man who, three times a day, neglects to use the personal crushing machine God has put into his mouth, when it is not his pocket-book that is at stake but his health, his happiness, his energy, his success, sometimes even his very life itself?

That is the mechanical side of the question. There is another side fully as important—the chemical.

Saliva contains a ferment called ptyalin. In the process of digestion this ptyalin changes cooked starch into sugar. This change must take place before the human system can derive any benefit from that great class of foods known as carbohydrates, such as most vegetables and all cereals. If this change of starch into sugar is not accomplished by the saliva, it may still occur through the action of the pancreatic juice in the intestine. If that were not so most of us would be dead by this time. But nature, by doubling organs, does not intend that one should be used to the entire disuse of the other. Two eyes are given us to use and not one alone. Somewhere near three pints of saliva are thrown into the mouth in every twenty-four hours. Who can doubt that Nature intended we should use it for the thorough insalivation of food? In mastication, wheat bread will absorb 55 per cent of its own weight of saliva, meat will absorb 48 per cent of its own weight. Food thus prepared for its journey through the alimentary canal is prepared as nature intended it should be.

But the great American habit is to spit. Americans, whether tobacco chewers or not, are the spitters of the world. Between meals they will spit out the invaluable saliva, especially when smoking; then when they eat they wash down every unchewed bolus with copious draughts of water, coffee, or in summer, iced tea. What a foolish, disgusting habit it is! and more than foolish, more than disgusting, it is killing in its hurtfulness. An habitual spitter at middle age will have the broken down digestive apparatus of an old man of seventy-five. Men who put their saliva out of business are drug-shop chasers and slow suicides.

And by the way, every generation sees less drugging done. When we can cut it all out we will be the better. Half a century ago, Oliver Wendell Holmes, himself a physician, said:—"I believe firmly that if the whole materia medica could be sunk to the bottom of the sea, it would be all the better for mankind and all the worse for the sea."

And Dr. Osler has recently said that the best physician is the one who best knows the uselessness of drugs. He might further say that the best patient—best to himself—is the one who has learned to properly use his saliva, then ninety-nine drugs out of a hundred will be worse than superfluous.

I have heard it urged that dogs are generally healthy and yet they never chew any food they can possibly get down their throats whole. But a dog is a carnivorous animal, while man is omnivorous. Now ptyalin, so the physiologists tell us, is absent from the saliva of the dog. It would be of no use since its purpose is to attack carbohydrates only and not to attack the proteids, the sole food of the carnivora. Yet man, if he chews at all, chews his meat and bolts all else. In truth, in the light of physiological chemistry he could better afford to bolt his meat, like his relatives on the one side, the carnivora, but chew his carbohydrates like his other relatives, the ruminants. Watch a cow chew the cud and you can then better realize how Nature intended we should treat the same class of food.

It is to be regretted that there is so little on our tables these days compelling thorough mastication. This is the day of pap. The more paplike the food the better it seems to suit the twentieth century man or woman. And therein lies all the history of our dental degeneration. The further back toward peasantry, or serfage, or savagery you go, the better teeth you find. Not because peasants and serfs and savages take better care of their teeth, not because they ever cleanse them at all, but because they eat coarse, rough, hard food—food such as black bread, jerked meat, and coarse grains, that necessitate the use of their teeth.

Man is not yet a finished product. If God were to stop now with man in the strikingly imperfect state of today, then surely it were but jest to call him an all-wise, all-powerful deity. Man is not created; he is in process of creation, as are all animals, and this process of creation is called evolution. Some intelligent people used to think the theory of evolution had sprung straight from hell. Ideas have changed now. The truth of evolution is acknowledged on all sides—evolution of plants, of animals, of religions, of morals, of ideas. As has been said:—

> "Some call it evolution
> While others call it God."

From this general law of evolution the teeth are not exempt. Evolution in all cases, you know, does not mean the bettering, sometimes, as in this case it means degeneration. Nature is a thrifty investor. Any part of the body that is used develops; any part that is not used atrophies. This was the one law of evolution as advanced by Lamark, the predecessor of Darwin and though in the writings of the latter, notably the "Origin of Species" and "Descent of Man," it is somewhat overshadowed by the theory of natural selection, yet its influence is recognized as being very strong.

If it had become the fashion of our ancestors centuries ago to bind up the right arm and never use it, what would our right arms be today? Merely useless, shrunken reminders of our forefathers, like the eyes of the mole and our Mammoth Cave fishes, the wings of the ostrich, or to come nearer home, the rudimentary muscles about the human ear. In this way do we explain the fact that teeth of civilized man today are imperfect compared to teeth of man in the savage state.

The typical number of mammalian teeth is 44; man in his evolution thus far having lost 12 teeth, 1 incisor, 1 premolar, and 1 molar. Many authorities hold that our third molar is now in process of elimination. We have all had patients who never erupted them. The supernumerary teeth we so often see are but evidences of atavism or return to ancestral type.

When teeth are adequately exercised, made, as one authority expresses it, to execute from one to two hours every day, a lively dance in their sockets, during which the circulation of blood in the tooth pulp, peridental membrane, gum, and alveola is vigorously stimulated and during which time the teeth themselves are cleansed by the hard contact of food and washed by a copious flow of saliva, then we have all the favorable conditions of good healthy tooth structure.

What is all this talk about prophylaxis, massage of the gums, etc., but a harking back to nature! When prior to civilization and mushy cooking we humans properly ate food of the proper consistency, the teeth cleansed themselves, the gums massaged themselves, and caries was almost unknown.

On the other hand when teeth are little used and the food bolted in hunks, the saliva grows thick, viscid, ropy and acid from disuse, and we have all the conditions favorable to tooth decay. More thorough mastication induces a greater flow of saliva, and, as has been proved, the greater the flow of saliva the greater its alkalinity, which is essential to its digestive power.

Then there is still another consideration and that consideration an important one. The gastric juice itself is induced to flow not so much by the presence of food in the stomach as it is by the smell and taste of food. This was proved by Professor Pavlov of St. Petersburg, who, in 1907, was awarded the Nobel Prize of $40,000 for his discovery which has revolutionized all the old ideas of digestion. The experiments by which this is proved on dogs are very interesting and conclusive.

Thus thorough tasting of food by mastication not only induces digestion of carbohydrates by the saliva, but it also induces digestion of the proteids by causing an increased flow of gastric juice in the stomach. The importance of this fact cannot be overestimated since it explains to us why the tasting, tasting, tasting, insisted upon by Fletcher, is so efficacious.

Physiologic mastication, as some have called this method, teaches us how to use our teeth and our sense of taste as nature intended we should use them; it teaches us not to shorten our days by self poisoning; it teaches us how to avoid headaches, pimples, boils, bad breaths, constipation, hemorrhoids, and last but not least for us dentists, pyorrhea alveolaris and dental caries surely an imposing list. If not these last two for ourselves then perhaps for our descendants. Since in the history of man disuse has made poor teeth of teeth that were good, then why cannot use in time make good teeth of poor ones? This is hitching our wagon to a star of some altitude, no doubt, but given enough time it is good evolutionary, and to some extent revolutionary doctrine, also.

Every dentist has examined mouths in which the one side that is used is almost immune from decay, while the opposite unused side shows caries rampant, when originally both in structure and occlusion one side was as good as the other. What better evidence could a man want of the efficacy of use in combating caries of the teeth?

Do we not also see what enforced disuse does for a tooth where it has lost its antagonists? Nature having slight tolerance of a disused organ keeps pushing it out much as she expels a splinter from the flesh.

Stockmen tell us that if they feed a cow on brewery swill, her teeth will become carious and loose, at length dropping out. She has quit using her teeth and nature discards them. After the loss of her dental apparatus she is compelled to live on swill; put her to grass again and she dies at once.

And yet dental writers in casting about for diets and drugs to inhibit the action of dental caries and pyorrhea have in nearly all instances overlooked this great law. I have in mind what is in all else a most excellent article on this subject, accompanied by reports of a series of original researches; yet the author never even hints that the *use* of teeth may be a good thing. The exceptions to this that have appeared in our dental magazines during the past twenty years are very few. In looking over my files of the *Cosmos* during that period I find one superb paper by Dr. B. J. Cigrand, in the April number of 1906, entitled, "Mandibular Action, Its Influence on the Entire System," an article worthy to be read by every dentist not already acquainted with it.

I think the profession well on the road now to declaring pyorrhea due to two causes, uncleanliness and the disuse of teeth. The uncleanliness may not be in the mouth, it may be yards further down the alimentary canal – namely, the fermenting, putrifying masses carried about in the distended bowel. Sufferers from pyorrhea are bolters of food, high livers and poor exercisers, at least of their jaws. To cure pyorrhea, or at least to attempt to cure it, get the mouth in proper aseptic condition, then teach the patient how to use his teeth and saliva—how to eat.

Were it not for the personal uncleanly habits tobacco chewing induces it would be an excellent thing. Even as it is, it is not an unmitigated evil. Tobacco chewers as a class have better teeth than non-chewers. Of course, tobacco is slightly antiseptic but in my opinion it is not the tobacco that gives them good teeth but the mechanical use of their teeth and jaws.

In the paper already referred to, Dr. Cigrand says:—"I have aided patrons most emphatically by advising the chewing of spruce gum or tar, and in some few instances have cured what was pronounced a distressing form of pyorrhea alveolaris. I hold to the opinion that too many teeth are treated as pyorrheal that simply require action of the jaw."

Proper mastication from disuse has become almost a lost art to the majority of humans. It ordinarily is but a succession of bites with no grinding at all. How many of us even with the best of teeth can get the lateral swing to the jaw that is so much more effective than the vertical, straight up and down motion? Notice the swing to the jaw of the horse or cow when chewing and you will realize at once its great effectiveness. It is much like the ponderous, triturating action of millstones.

If this is another phase of evolution it seems to be working in a somewhat backward way. The vertical motion of the mandible is typical of the carnivora, the triturating motion, of the ruminants. As the one disappears does it signify that we are becoming more carnivorous? I think the reverse is really true. But this is idle speculation.

There are still a few things we can exercise our teeth upon if we will, even in this degenerate age of cookery, and the man who has never chewed hard, and when I say hard I mean it, does not realize the joy of the act of thorough mastication. The biting in two of a hard crust of bread, by large odds the most valuable part of the loaf, involves the pressure of 100 to 150 pounds, while in eating good old parched corn, a dish much neglected these days, a molar may have a pressure of from 200 to 250 pounds applied to it; to cut through an ordinary beefsteak requires 75 pounds pressure of a molar. Yet children following the degeneracy of the age are wont to leave the precious crust uneaten: and complain that parched corn, if they even know what it is, is too hard for their teeth. It may seem to you that such pressure means the strenuous life for our dental organs. It does and thereby comes the good of it. It is on record that acrobats have developed and used constantly in their displays a jaw pressure of five hundred pounds. I warrant the assertion that such men never have dental caries. In other words, in the promotion of good teeth the very milk of the cocoanut lies in the *use* of them, the *hard use* of them.

In Fletcher's book, "The A-B-Z of Our Own Nutrition" are reproduced some studies of mastication originally published in the London Lancet by a Dr. Campbell of the Northwest London Hospital. In these studies the author points out what he considers the cause of adenoids and it is interesting enough to dwell upon for a moment.

The internal and external ptergoid muscles arise principally from the ptergoid plates of the sphenoid bone and pass downward and outward to the mandible. These are the muscles that cause us dentists trouble at times in securing the correct bite. They throw the jaw forward and to either side. Now, in the mastication of food these muscles exert a spreading influence upon the nasal bones which secures for us the normal width of the posterior nares as the external ptergoid muscles are almost horizontal in direction. In children who do not use their teeth sufficiently the posterior nares do not develop, thus necessitating mouth breathing and adenoids due to the downward suction in the pharynx of mouth breathing.

This may seem a finely spun theory at first thought, but if you will get down your dust-covered anatomy as I did mine and study the direction of the pull of these muscles during mastication, your skepticism will much diminish. The cause of the growth of adenoids has been a disputed question. Some have said adenoids cause mouth breathing, others that mouth breathing causes adenoids. Dr. Campbell holds lack of proper mastication in babes and children causes them both. It seems logical. It also agrees with the history of our evolution. We know primitive peoples use their jaws even in babyhood much more than we do; it is also known that among savages contracted arches and adenoids are unknown. From these facts I believe we are warranted in holding that lack of use of the mandible has caused both contracted arches and adenoids.

But to come back to our subject proper. The use of our saliva in tasting all the taste out of food not only prevents overeating but it also prevents our eating and drinking things we should not eat and drink. Rich foods become unattractive. One who has learned to eat *a la* Fletcher finds that his appetite calls for less proteid food, which modern science tells us is a tissue builder, but in no sense an energy producer. He does not become a vegetarian, but he finds as time goes on that he cares less and less for meats of all kinds.

The term vegetarian is really a misnomer. A more correct term would be non-flesh-eater. To be a vegetarian one must eschew eggs, butter, milk, cheese and various soups that no one in all strictness does. Yet so called vegetarianism is no doubt making advances in these days. Dr. Wiley, Chief of the Bureau of Chemistry, Agricultural Dept., is quoted as saying:

> "Lots of people are vegetarians. We eat too much meat for health. I have voluntarily cut down my meat to one meal a day and I do not eat much at that. For the sustenance of physical exertion, if you have hard work to do, there is nothing better than starch or sugar. The cereal eating nations can endure more toil than the meat eating nations. This is not the accepted view but it is true. You cannot tire out a Jap who eats rice. He will draw you all around town on a pound of rice, and be as fresh at the close of day as when he started. You could not do that on a pound of meat to save your life."

As for meat, the whole matter of its killing, preparation, and eating is, when you come to think of it, most revolting; and it is my belief that it is the destiny of the human race, in its gradual improvement, to leave off eating animals, just as the savages stopped eating each other when they became civilized. This, you know, does not mean that your system will be cut off from all supply of proteid or albuminous food. Nearly all foods contain some proteid, and beans, peas, eggs, milk and the cheeses are well supplied with it.

But the discussion of diet is endless and about as useless as anything in which we can indulge. We live not by what we eat but by what we assimilate; and the first requisite of good assimilation, as we are only now learning, is in mouth preparation of food, the use of our saliva. Given that, the appetite will regulate all else and can be followed implicitly.

Carlyle, the sage of Chelsea, said:—"Of a truth, if man were not a poor hungry dastard, and even much of a blockhead withal, he would cease criticising his victuals to such extent, and criticise himself rather, what he does with his victuals."

And surely Tammas was right.

The practice of thorough mastication then does not mean dieting. It means that you can eat anything, that is an attractive part of it. Nor by it is your meal made less enjoyable but on the other hand it is made more enjoyable, and it is not followed by that oppressive sense of fulness and that drowsiness that incapacitates us for the time of our highest attainments, both mental and physical, but especially mental. Neither does it take more time. A man can thoroughly taste and masticate all he should eat at one time in from 15 to 20 minutes; and after following the practice even for only a few weeks he will feel an access of ambition and energy, a clearness of brain, and a feeling of internal cleanliness and well-being that will be a revelation to him. He will be a better animal, consequently a better man, consequently a better dentist.

Elbert Hubbard who certainly has the faculty of stating a case in as striking a manner as any living writer, says:—

"In order to be acceptable to society and the people who have to live with us we should avoid transforming ourselves into a garbage barge. Most people are human sewers. They eat hurridly and swallow with conscious effort which means that they bolt their food and leave it to the thirty-two feet of alimentary canal to care for. Thus they carry with them constantly decaying masses of refuse that leave them 50% sick. The real wonder is that they live at all. Eczema, gout, headache, pimples, boils, bad breath, that foggy feeling, these are all symptoms of food poisoning."

Experiments have been made of the efficacy of the Fletcher method of eating in various institutions and always with favorable results so far as I have been able to ascertain. In 1902 in Cambridge University, England, a series of experiments were conducted under Dr. Hubert Higgins and Dr. F. G. Hopkins. The results were very favorable. Dr. Higgins was so enthused that he wrote a book on the subject, "Humaniculture," in which incidentally he tells how by proper tasting and mastication he reduced his weight from 282 pounds to 178 pounds, to the great benefit of his health, his energy, and his mental ability.

The late Sir Michael Foster who was permanent honorary president of the International Congress of Physiologists, was a widely known English scientist who wrote favorably upon the ideas advocated by Horace Fletcher.

In our own country Professor Russell H. Chittenden at Yale, Professor Irving Fisher at Yale, and the officials at West Point have experimented upon Mr. Fletcher and upon many students and athletes, by lowering the quantity of food, especially of proteid, and practicing physiologic mastication, as some have termed it, and in all cases the results were favorable, in many, most remarkable.

Dr. W. B. Cannon, Professor of Physiology at the Harvard Medical College, Boston, has conducted experiments by feeding animals food mixed with subnitrate of bismuth to render it opaque, then observing the course of the food in the body by means of the X rays. By his experiments he has overcome one of the charges against the efficacy of thorough mastication. Some have said it was useless to insalivate food expecting any chemical action from the alkaline saliva, since it was at once immersed in the acid gastric juice in the stomach and all alkaline digestive action stopped. Dr. Cannon has shown that food in the stomach is not at once mixed with the gastric juice but is held in the fundus and only gradually eked out to the pyloric portion and there mixed with the gastric juice; thus by thorough insalivation you start an alkaline chemical digestion of carbohydrates that may proceed for an hour before it is stopped by the action of the gastric juice.

Professor Chittenden, who is an ex-president of the American Physiological Society, and Director of the Sheffield Scientific School at Yale, has written a book entitled, "Nutrition of Man." In this book he tells of the experiments he made upon a squad of lusty soldiers extending over a series of months in which he conclusively proves that the average man eats two or three times more than is necessary for his maintenance in good health and vigor; and that instead of eating ten to twenty ounces of proteid a day he should for his greater efficiency eat but two ounces.

But these various experiences cannot be entered upon here in detail. Suffice to say that in both physical endurance and mental capacity the students and soldiers experimented upon showed wonderful improvement.

Like all good things I suppose mastication can be carried to an extreme where it might prove harmful. It is possible for a man to love even his wife too much. But this I will say and I think you will all agree with me in it:—I have seen many hundreds of men and women who were gross overeaters and bolters of food and I have yet to see one whom I thought ate too little and masticated too thoroughly. It was Dr. Osler, I believe, who divided the American nation into bolters and chewers—from my observation I believe nine bolters to one chewer would be about the proper proportion.

Like all deeply rooted habits, improper eating can be conquered only by persistent determination and exercise of will power. But I firmly believe that to many sick and suffering and to many more half sick and half suffering, the practice of thorough tasting and mastication will be a regenerating force that will alter their whole lives for the better. Instead of living to eat they will in a truly rational way learn to eat to live.

Horace Fletcher is called a crank, which he undoubtedly is. He has good right to be. Read the story of his life and you will know why. And by the way, do you not think that term "crank" hath a very ancient and fishlike smell? It was applied to Copernicus, to Galileo, to Columbus, to Eli Whitney, and to many lesser men who have helped the world onward in its progress. Only a few years ago while in Dayton I heard the term applied to the Wright brothers. That they have used their cranks to turn the world we are all ready enough to admit now. As for Fletcher, he is an extremist, no doubt. Read his book and some of his statements will astound you. Whether science will in the end fully endorse him remains for the future to disclose. As for the present we know all authorities are swinging in his direction and swinging with a momentum that is most convincing.

Now to conclude:—The instruction of people in the proper use of their teeth and their saliva is certainly within the domain of the dentist. When a patient comes to you who is suffering from pyorrhea or from extensive caries and who is a gross bolter and overeater—in most cases you can tell by his looks—and you fail to protest against his manner of living, fail to instruct him to eat hard food, to use his jaw, to use his teeth, and to use his saliva, then I believe you have neglected one of the most essential points looking toward his recovery.

BIBLIOGRAPHY.

Among the books well worth reading along the line of this paper are the following:

"The A-B-Z of Our Own Nutrition," by Horace Fletcher.

"The Nutrition of Man," by Prof. Russell H. Chittenden.

"Scientific Nutrition Simplified," by Goodwin Brown.

"Health, Strength and Happiness," by C. W. Saleeby, M. D., Edinburgh.

In dental journals the following papers should be read by one interested:

"Studies in the Degeneracy of the Jaws of the Human Race," by E. S. Talbot. *Cosmos,* 1892.

"Local Exercise and Dietetic Influence Upon the Teeth," by Sidney S. Stowell. *Cosmos,* Jan., 1895.

"Anatomic Changes in the Head, Face, Jaws and Teeth in the Evolution of Man," E. S. Talbot. *Cosmos,* Nov., 1904.

"The Influence of Mastication Upon the Teeth," by Horace L. Howe. *Cosmos,* Nov., 1905.

"Food in its Relation to Teeth, Their Sockets and Adjacent Structures," by A. W. Harlan. *Items of Interest,* Nov., 1905.

"Mandibular Action; Its Influence Upon the Entire System," by B. J. Cigrand. *Cosmos,* April, 1906.

"The Teeth as Essentials or Non-Essentials to Civilized Man," by C. M. Wright. Dental Summary, May, 1906.

"The Relation of Diet to Interstitial Gingivitis," by C. T. Stockwell. *Cosmos,* Aug., 1907.

"The Influence of Dentistry in Preventive Hygiene," by Horace Fletcher. *Cosmos,* Feb., 1909.

DISCUSSION

G. E. HUNT, Indianapolis, Ind.: Dr. Sexton does not very often give us a paper, but whenever he does he gives us a most excellent one. He not only has something to say, but he says it in a manner that makes it a pleasure to hear or to read afterward, and I wish he might be persuaded to read papers more often.

I do not feel that I am well qualified to open the discussion on this paper for the reason that as a rule we expect the openers of discussions to criticise the papers, and I cannot conscientiously criticise this paper at all. I agree with him most thoroughly in the necessity for the use of the teeth and that the question of salivation is an important one. The necessity for properly masticating the proteids, and especially meats, is very great indeed. I am convinced that fully half of the ills that flesh is heir to are due to improper mastication of the nitrogenous foods, the meats especially. These particles of meat, instead of being digested, are infected by millions of bacteria and the result is something that is extremely revolting to think of.

In regard to the amount of food we eat, I am thoroughly convinced that every one of us eats too much food; we take too much into our stomachs. While we are young, as some of us still are, the effect of this overloading of the digestive tract is not so apparent because Nature braces up against the excess of work that is forced upon her. But as we grow older this excess is almost certain to show in many ways, the most common of which will be dyspepsia of one character or another, or in an excess of fat in places where you might just as well get along without it.

It is about seven years since I habitually ate a noon meal. Once in a while I eat a slight amount of food at noon, more in the way of companionship than for any other reason, and I can truthfully say not more than ten times in a year, for seven years, at least, have I eaten more than two meals a day. My morning meal is very uniform, consisting of two eggs in one form or another, some buttered toast and a cup of coffee, and from that meal, which is eaten at about 7:30 a. m., I eat nothing until 6.30 in the evening, when I eat a good dinner. I have lost no weight. I think we all eat too much and I believe we would be better off if we would cut out one meal a day, and that should be the noon meal. A heavy noon meal is especially injurious for the dentist, who has to work as hard with his brain in the afternoon as he does in the morning; so in my judgment cutting out the noon meal would be a most excellent thing for all of you.

Now there is another phase of this subject that the essayist did not touch upon, because it did not really fall within the province of his paper, and that is the influence of proteids, and especially the proteids in the form of meat, upon the tissues of the body when taken in excess. No matter how well we masticate the proteids, if they are taken in excess, and most of us do take them in excess, in the course of time we develop uric acid, and the attendant train of evils that follows that condition is well known. We get an excess of uric acid in the body; sometimes it is in the ear, sometimes in the second joint of the big toe and sometimes in the peridental membrane. That condition is a bad one. We have gout; we call it gout if we have it in the big toe; we call it gout if we have it in the lobe of the ear, and we call it pyorrhea alveolaris if we have it in the peridental membrane. That is just as certainly due to over indulgence in proteids as can be.

I think it was Glatstone who advocated thirty-two chews to each mouthful, because he thought each tooth was entitled to a chew and that is the reason for the thirty-two. This man Fletcher is quite a man. I have not read his book, although I have read reviews and several of his articles in magazines, and while he may be a crank, it is cranks that make the world go round. Fletcher is a crank on this subject, but why would he not be? The man was in a bad state of health, the doctors said he was headed for the grave, he could not get an insurance policy, and he was really in a wretched physical condition when he took up this habit of masticating his food until the sense of taste was lost. He is living yet and is a pretty good insurance risk, and it is all due, undoubtedly, to his thorough mastication of food. There may be others that we do not know of. I have no doubt that in the course of time we will have Dr. Fletcher's experience thoroughly confirmed by a number of other cases. I do not pratice Fletcherism to the extent that he does, but I do say that as I approach middle age I chew my food a good deal more thoroughly than I used to. Fast eating, bolting of the food, of the proteids, especially—all of these things are more responsible for some of the flesh-ills that man is heir to than any other one source of disease or infection. I am thoroughly convinced of it.

F. J. PROW, Bloomington, Ind.: First, I want to compliment Dr. Sexton upon his paper, both as to its intrinsic value and as to the importance of his subject to us all as individuals. I think it is a most excellent subject and paper and it should be of the most vital interest to us.

Very few of the human family, or at least very few of the so-called upper classes, thoroughly masticate their food. Since reading this paper some few weeks ago I have endeavored to make myself chew and taste more. I found on watching myself that I was poorly doing my work. I think if almost any of you will take the time and interest to watch yourself for a few meals you will be surprised to find how far away from "Fletcherism" you really are. I wish every American citizen might have the privilege of hearing this paper and hear it understandingly. Our American worry and hurry extends to our eating as well as to our business life. No one can eat properly when worried or hurried.

The point Dr. Sexton makes as to us mortals who have larger waist measure than chest measure is a very good one. Can we not do considerable missionary work by advising the few with whom we come in contact how they should eat? The point that Dr. Sexton makes that few of us were ever taught how to eat is quite true. Most parents pay little attention to it.

As to the use of one side of the jaw more than the other it has always been of interest to me in the observance of the different mouths of my patients. You will always see a healthy condition on the side most used, and I thoroughly agree with our essayist that hard, strenuous usage of the teeth in mastication is a positive necessity.

H. B. TILESTON, Louisville, Ky.: Dr. Sexton's paper is not only a very interesting one but presents a subject of a great deal of value to all of us. The importance of Fletcher's views would seem to be well demonstrated to the dentist, because he sees so positively the bad effects of the bolting of food without proper mastication.

Dr. Sexton referred to the bolting of food as a great destroyer of human health. The taking into the stomach of food which has not been properly prepared by mastication, results not only in derangement of the digestive functions, but possibly in the breaking down of the health of the entire organism.

The question of digestion after the food leaves the mouth eventually involves proper salivation during mastication for the purpose of digesting the starches, not so much the proteids as the starches. It is in the mouth that the starches must be converted into grape sugar in order to make them digestible. Some recent investigator has introduced a new idea on the subject of the exciting of gastric juice, and that is that the flow of gastric juice is not excited by the smell of food or the sight of food, as our saliva is caused to flow by the smell or sight of food. He claims to have discovered a new secretion in the stomach which, for want of a better name, he has called "Secretine." When the food enters the stomach it is thrown repeatedly, by the muscular action of that organ, against these seceretine glands and when mixed with secretine the food is acted upon by the gastric juice. It is only through secretine that the flow of gastric juice is excited. Most of the food remains in an alkaline condition until this secretine is thrown out and excites the flow of gastric juice.

Recently a medical man was invited as a guest to one of our local dental meetings, and he suggested that it might be possible to explain the presence of pyorrhea by the existence in the mouth of an unknown secretine. I have nothing to offer in the way of enlightenment on that subject. It seems to me it falls as a duty upon the dentist to make it a point to instruct the public how to masticate food, to insist upon the proper use and care of the teeth so that they may be saved from pyorrhea, and from caries.

C. E. Redmon, Peru, Ind.: It is certainly an excellent paper and it is very instructive, and I try to live up to a part of it. I eat plenty.

Dr. Hunt says, in eating, he takes only two meals a day. I will say that in the last twelve years I do not suppose I have eaten over fifteen or twenty dinners at noon, but the egg and piece of toast and coffee do not suit me for breakfast. I eat the egg or chicken that he spoke of all right. I like a cereal and prefer shredded wheat. (Now, I am not advertising any breakfast food). I do not eat any dinner, that is, lunch at noon, but I eat a good hearty supper. .

Dr. A. G. H. Duden, Indianapolis, Ind.: I concur in the fullest sense with all that Dr. Sexton has said. From the time that I listened to Dr. Fletcher giving one of his famous talks in Boston I have been an ardent admirer and follower of his. I have preached Fletcherism to my patients and my friends, and in admonishing patients along these lines I have asked them if they expected the mucous membrane of the stomach to do the work that the teeth were put there to do, and of course it sets patients thinking.

I wish there were more sermons of this kind. And I also wish that the Dental Colleges would devote more time in their teachings to such a profoundly important subject. The significance of the function of a normal saliva cannot be over-estimated.

H. M. Thomson, Indianapolis: I never knew Dr. Sexton to write a paper that I did not say something complimentary about.

I have a boy fourteen years old, and if I can get that boy to Fletcherize his food and eat half as much as he does now I will be living on Easy street in a few days. I was talking with a friend who was on a train with Dr. Fletcher one time and he saw Dr. Fletcher buy an apple. He said "I am going to see how he eats that." It was certainly amazing the way that apple disappeared. He didn't believe there was a man on that train that could have gotten rid of that apple in less time than Fletcher did.

There isn't any doubt about his paper being a most excellent one.

Dr. Sexton: (Closing discussion). I believe I have nothing to add to my paper, but want to thank the members for their kind consideration of it.

THE·SUCCESSFUL DENTIST

WINNING PATRONAGE

By C. N. Johnson, M. A., L. D. S., D. D. S., Chicago, Ill.

(*Continued from page 277, March Summary*)

MORALS

IN line with this, and leading up to it is the question of morals. These articles are not written in the spirit of pharisaism, and yet a consideration of success in practice cannot be altogether divorced from the fundamental subject of morality. Leaving out of the question its religious or ethical features, it still remains a matter of the greatest importance, from a purely business point of view, that the dentist live an upright, moral life. Laxity in morals has a wider-reaching effect than the average young man is likely to imagine. He cannot help realizing, of course, that respectable people do not care to patronize a dentist who is known to be morally bad, and yet he who makes moral lapses often fondly hopes that his escapades are known only to the few associates who take part in them. There never was a greater fallacy than this, for no matter how close the bond of secrecy between such associates may be, the facts invariably leak out somehow, sometime, somewhere. Many a youny man has irretrievably lost his reputation and his practice as the result of moral delinquencies without seemingly being able to account for his failure. It is difficult to overestimate the effect of morals on daily life and practice. Even if it were possible to keep the knowledge of immorality from the public, there is irrevocably a concomitant disintegration of character which goes with an immoral life, and which sooner or later undermines a man's success. The young man in his orgies may foolishly hope to extend his acquaintance and gain patronage among those with whom he associates, but even if such people were calculated to make good patients, it is not always certain that they care to patronize a dentist who is lax in his morals. The relation of dentist to patient is of so intimate a nature that no ordinary requirements—such as those which pertain to trade—will suffice to establish confidence, and very often the people who are glad to be hail-fellow with a dentist will dispense with his professional services simply because of his hail-fellowship with them. A striking illustration of this came to the attention of the writer some years ago, and is worth relating as indicating the sentiments of at least one hail-fellow. On the train I met a finely-dressed gentlemen, who, in the course of a long journey, became sufficiently familiar to tell me his business. He was the keeper of a famous eating-house and saloon in a distant city a place I had often heard mentioned as the resort of the swell set of the place. He in turn asked me what my business was, and when informed that I was a dentist, he said: "By the way, do you know Dr. Blank of my city?" I replied that I knew him by reputation, but not personally. "Well," said he, "he is a royal good fellow. He frequently comes to my place, and we spend many of our evenings together. I've often been out shooting and fishing with him, and, in fact, I enjoy him very much." I said I understood the doctor was a very good dentist; at which my companion gazed out of the car window a moment, and ventured the remark that he didn't know much about that. I looked at him inquiringly, and he finally said: "The fact is, when any member of my family wants dental work done I send them to some one else." I remarked that this seemed rather strange, in view of their great friendship, and he replied: "Yes, it may seem strange, but business is business. Doc. is a good fellow, and I like his companionship, but when my wife or my children need the services of a dentist or a physician I send them to some one who is a good professional man and not a 'good fellow.' To be frank with you, I see too much of the seamy side of life myself to want to trust my family in the hands of a man who dissipates in any way."

Here was a sermon, which, though preached by a saloon-keeper on a sleeping-car going fifty miles an hour, embodied as great a lesson for the professional man as did the famous Sermon on the Mount for the early Christians.

The simple truth is that a moral life is a more important factor in real success than most people imagine. It is the only certain foundation on which a professional practice can be built, and the sooner a young man comes to a full realization of this fact the better it will be, not only for his peace of mind, but for his material advancement. Bad habits disintegrate always; good habits invariably build up. And habit is so insinuating, so dominating. It is often said, and truly, that bad habits are hard to break; but how many people recognize the significant fact that good habits are equally tenacious? As the years go on towards maturity and the individual becomes more and more dominated by habit, it will be found as difficult to give up a good habit as a bad one. This is at the same time a most encouraging fact and a solemn warning. It emphasizes the far-reaching importance of establishing good habits in youth when the individual is in the formative period and when the delicate balance between the right road and the wrong one is so easily turned. Let every young man carefully take account of his present status in this matter, and resolve to so place himself in relation to morality and the trend of his habits that his future may be secure in the fulfilment of all that is best and most worth attaining in life.

HONESTY OF PURPOSE

Another concomitant adjunct to success in practice is the demonstration to the patient of an absolute honesty of purpose in everything that is done. A firm conviction of what is just and equitable to both patient and operator should form the basis of every-day practice, and the dentist should early seek to establish confidence among his patients by a rigid adherence to a policy which has for its groundwork the principle of eternal right. If a man has in his very soul the essence of a basic honesty, he does not need to tell his patrons that he is honest—they will know it without the telling. The fact will shine through his every action, and will so illuminate his professional pathway that people will be intuitively drawn to him. When a man once establishes the reputation for rigid honesty he is more than half-armed against dissension and misunderstanding. If a difference of opinion arises between a practitioner and his patient, the question as to whether or not the practitioner is really honest is one of the first which enters the mind of the patient. And if the dentist is known to be honest, his contention is invariably respected, even though the patient may not agree with him in opinion.

This matter of honesty relates as much to the details of the work performed, the pains taken with each operation, the character of the operation, the best judgment as to what shall or shall not be done in a given case, and the advice upon matters with which the patient is not familiar, as it does to questions of finance or the purely business phase of practice. In other words, the dentist should be professionally honest as well a commercially so.

The mere fact of honesty is an element of immense strength to a man in any walk of life. The man who is fundamentally and profoundly honest need not be afraid of any other man or combination of men, and usually he is not. Honesty begets confidence and confidence is the key note to attainment. Unless a dentist has confidence he cannot expect to succeed. It is only through confidence in himself that he can inspire confidence on the part of others, and he should most assiduously cultivate this element in his character. It is hardly necessary to state in this connection that there is a vast distinction between an honest confidence and a vulgar self-conceit, though many a young man would seem to confuse the two. Self-conceit undermines and belittles, confidence builds up and magnifies. Confidence is cumulative, strong and psychic in its influence, and there is scarcely any other one element so potent as this in the successful building of a dental practice.

PUNCTUALITY AND SYSTEM

The virtue of punctuality and system must also be emphasized in considering the requisites necessary for success in professional life. The man who conducts his practice in a hap-hazard way will have hap-hazard results, and such a man will usually be the first to wonder why he does not succeed. There is a reason for everything in the world; and if a man fails in life, there is some reason for it. It is only for the one who fails to search out the cause of his failure, and then resolutely set himself to work to correct the fault, no matter at what cost of determination and perseverance. This last statement would seem to imply that the causes of a man's failure must necessarily be found connected with the man himself, and this is not merely an assumption, but a fundamental and most profound fact.

Many a promising dentist has thrown away a rare chance of success by lack of punctuality and system. In this age of intense activity in material pursuits the value of time becomes an important element in the conduct of one's affairs, and no patient of any consequence will continue to patronize a dentist who does not economize time by being systematic. If a piece of work is promised at a certain time, the dentist should make it a rule to have it done at that ime. The necessity for constantly apologizing on account of lapses in this regard invariably weakens the hold a dentist has on his patient and destroys the confidence they have in his general integrity. There is nothing so demoralizing as to find a man careless of his word or his promise. When an appointment is made with a patient for a certain hour, it should be the aim of the dentist to be ready for the patient at the appointed time if at all possible. Of course, in a professional pursuit where the relief of pain is the paramount duty emergencies will arise which sometimes delay the practitioner beyond the time set, but these are only occasional and are easily explained and readily understood by the patient.

KNOWLEDGE OF HUMAN NATURE

Above all things else, to be a successful dentist a man must be a close student of human nature. I have already said that the chief requisite for success in the practice of dentistry is efficiency—in other words, that to be successful a dentist must be skillful -and this statement still holds good. But I have also tried to show that there are other requisites aside from mere skill which enter materially into success, and of all of these I know of none more essential than this matter of studying the characteristics and temperaments of patients. To be perfectly and completely a master of his environment the dentist should be able to read like an open book every man or woman who comes into his office. And this can be accomplished by study -a kind of study which really becomes the most fascinating and most profitable of all pursuits. To do this a dentist must come in contact with people as widely as possible, and he must cultivate to the highest degree the power of observation. No act or movement or impulse of any individual should escape him; and without in the least degree being impertinent or obtrusive he should try to fathom the motive which prompts people to act. This one great fundamental fact of motive is the key which unlocks many a hidden mystery of human action and makes clear what would otherwise appear paradoxical in an individual. No two people can be successfully managed by the same methods, and in scarcely any pursuit with the possible exception of medicine—is the ability to read human nature more important than in dental practice. A quick intuition of the temperament, the whims, the prejudices, the fancies, and the peculiarities of individuals is a wonderful talisman in the management of a practice, and the man who has successfully cultivated this has gone much farther than half way towards making his affairs run smoothly and satisfactorily.

The intimation is not here intended that a dentist should be at all cringing or subservient to the petty caprices or unreasoning or domination of those who seek his services, but merely that he should have the tact, based on his knowledge of temperament, to so manage his patients that he can win their confidence and subsequently their full control. You cannot control patients till you have their confidence, and you cannot gain their confidence till you understand them. This study of human nature is most broadening in its influence, and it is prolific of great good aside from the mere advantage it presents in a practical way.

It may not be clear to all as to just what is meant by the suggestion to handle patients differently on the basis of a knowledge of their varying moods and temperaments, but a single illustration will suffice to indicate the meaning. A business man whose time is valuable, who has vast interests at stake, and who is not much given to speech may apply for an appointment. What that man wants is to have his dental work done in the most expeditious manner and with the fewest possible words. He does not come to the office to visit or gossip. Every unnecessary remark made by the dentist is just so much waste time to him, and he naturally resents personalities or trivial talk of any kind. A gentlemanly "Good morning. Please be seated." and a prompt and business-like approach to the work in hand appeals to him at once. An operation may often be performed for such a man with scarcely a word from beginning to end—the entire attention and energy of the operator being concentrated on the work rather than on anything of a conversational nature. To a man like this any casual remark —even that connected with the nature of the work being done—is a needless distraction which diverts from the main purpose of the sitting and steals so much of his time. The fewer words the better with such a man, and anything aside from the ordinary courtesies of salutation and dismissal is uncalled for. It is all business with him, there is little of the social element in his make-up and what small percentage there may be does not find the proper environment for its display in a dental office. You can gain that man's respect and favor more by what you leave unsaid than by anything you can say. It is the doing he wants—the doing promptly and without any fussiness.

On the other hand, there are some individuals who are so socially inclined that they must talk and be talked to. The dental office is of course not the place for visiting or shop-talk or gossip of any kind. It should not be made the clearing-house of all the petty scandal of the community; and yet it must not be turned into a monastery or a bear's den. People must be courteously received, and some of them must be more or less entertained while there. Certain individuals are so cheery and friendly in temperament that the dentist must himself take on an air of cheeriness and friendliness in dealing with them. To carry an individual of this character through an operation in the same brusque fashion demanded by the reserved business man just referred to would be simple barbarity. It is necessary with some patients during an operation to make more or less of a running commentary on the work as it is being done. The mere fact of conversation is to them a wonderful relief of tension; and while they may be so situated with appliances in the mouth that they cannot well talk themselves, the carefully modulated and sympathetic voice of the operator encouraging them in trying periods of the work has a sustaining influence which must not be overlooked.

It should of course ordinarily be the aim of the operator to proceed with his work with as little waste of words as possible, and he should invariably discourage by example too much talking during an operation. The concentration of energy necessary to accomplish the best results—particularly where intricate work is being done—is always disturbed and the harmony of results marred by frequent diversions of speech; and yet with patients of the temperament just indicated a certain amount of talking is necessary, not only for the pleasure it gives the patient but for its quieting influence during an operation.

This is only one of the many ways in which a quick intuition of temperament may be made to do service in the management of patients. A constant display of tact and delicacy, the advantage to be taken of certain moods and fancies, the ability to say the right word at the right time, and particularly to avoid saying the wrong word, all of these embodied in an intricate and intimate knowledge of human nature will at once place the dentist in possession of the power to solve many of the difficult problems to be encountered in conducting a dental practice.

ESSENTIALS TO SUCCESS CAN BE CULTIVATED

In thus briefly enumerating the various essentials to success it will be noted that the original proposition to the effect that these requisites were for the most part of a character that could be cultivated by persons of average ability still holds good. A man cannot necessarily become a successful dentist by merely wishing to be, but he can attain to any of the essentials of success by application. It is the steady, sturdy plodder who wins in the end; and any young man with a taste for dentistry can assuredly win success if he only applies himself. The best message that can be sent out under this head is summed up in the one term application: Without this no man can succeed in any calling, least of all in dentistry.

THIS may not be the best of all possible worlds, but to say that it is the worst is mere petulant nonsense.—*Thomas Huxley.*

A DISCLAIMER AND A WARNING.

Dr. Chalmers J. Lyons, of Jackson, Mich., an old and valued friend of The Dental Summary and of its editor and publishers, has sent us a letter concerning the manufacturers, manufacture and sale of Miller's Local Anesthetic, which reaches this office too late for publication entire in the April number as requested.

Dr. Lyons says that his attention has just been called to an advertising leaflet being circulated by the concern in question, containing a letter purporting to be from him, dated December 7, 1907, in some manner endorsing and recommending the use of the preparation referred to above.

We quote the following from the communication from Dr. Lyons:

"From the years 1898 to 1906, the writer practiced dentistry in Adrian, Mich., and while there did some experimental work for a Mr. Miller, an expert chemist. He was then experimenting on local anesthetics. We tried out several preparations, and about the time the writer left Adrian, Mr. Miller perfected the present 'Miller's Local Anesthetic.' He wanted the experiments with it continued, and, sometime afterward, a report was made to him, out of which has developed this letter of recommendation which is being sent out as advertising matter. The confidence that was placed in this able chemist was sufficient to justify the experimental work, on the supposition that when it went into the hands of the dentist he would know just what he was using, instead of its being a nostrum.

"In repudiating this purported letter of recommendation, the writer takes this stand: He absolutely refuses to use himself or recommend to others the use of a remedy or drug with the physiological and therapeutic action of which he is not wholly and thoroughly familiar.

"Here is a note of warning that should be sounded to the dental profession: A dentist is never justified in using any drug or remedy on a patient with which he is not thoroughly familiar, both as to its physiological and therapeutic action; and it is the opinion of the writer that the courts will hold the man responsible who violates that principle, should serious results follow his doing so.

"For operation in minor surgery, Miller's preparation has anesthetic properties that are not without merit; but is it fair to the dentist and the physician to ask them to employ an agent for the relief of pain, concerning the physiological action of which they are totally ignorant? Is the man who does employ such an agent fair with his patients? This principle need not apply to anesthetics alone, but to all the therapeutic agents that a dentist is called upon to use in the relief of suffering humanity."

MICHIGAN STATE DENTAL SOCIETY.

The next annual meeting of the Michigan State Dental Society will be held in Detroit, June 13, 14 and 15, 1910. For particulars write Don M. Graham, Secretary, 602 Gas Office Building, Detroit, Mich.

ALABAMA DENTAL ASSOCIATION.

The next annual meeting of the Alabama Dental Association will be held in Mobile, Ala., May 10-13, 1910. All ethical dentists invited. E. W. Patton, *Secy.*

Selma, Ala., March 14, '10.

EDITORIAL

ORTHODONTICS INSTEAD OF ORTHODONTIA.

THE British Society for the Study of Orthodontia has recently changed its name to "The British Society for the Study of Orthodontics." The change of name, states *The Dental Record*, was the result of the visit of the eminent philologist, Sir James Murray, to the operating room of one of the officers of the society. He saw the word "orthodontia," asked its meaning, and his philological soul was stirred to its depths by what he considered a philological solecism. Anxious that a society which endeavors to correct irregularities should itself be regular, the officer requested the learned professor to write a letter, which he later read before the society. As a result of Dr. Murray's letter the society resolved to change its name.

The British Dental Journal quotes a portion of Sir James Murray's letter as follows:

"It is not easy to construct scientific names on Greek analogies for things of which the Greeks had no knowledge, or notions which they had never entertained. I cannot say that *Orthodontia* in 'Society, for the study of Orthodontia' is absolutely *wrong;* but I do not feel it to be quite correct. If I had come across *Orthodontia*, or better *Orthodonty,* without contextual aid, I should have certainly inferred that it meant the condition of being 'orthodont' or *straight-toothed* or *erect-toothed*, and was either a term of palæo-craniology, or perhaps had some reference to a particular dentition of recent or fossil fishes. I should have admitted also that it *might* mean the condition of being 'rightly or normally toothed.' Words of this form usually, or nearly always, mean a *physical state: c. f. e. g.*, amblyopia or *amblyopy*, myopia or *myopy*, and the numerous forms in *-cephaly*, where we actually have *orthocephaly*, the condition of being normal-headed, normal-headedness, beside *brachycephaly, dolichocephaly*, etc. I do not think we should consider 'the study of *orthocephaly*' to be a study of the various forms of the skull. After consulting my collaborators, Dr. Bradley and Dr. Craigie, we are inclined to think *Orthodontics* a better term, and on the whole capable of better defense. Names of branches of science, especially of a practical character, are commonly in *-ics*, from Greek, -iká neuter pl. of adjs. taken substantively, and meaning 'things or matter belonging or relating to.' *e. g., Alphabetics, Phonetics, Optics, Statics, Dynamics, Tactics, Apologetics, Mathematics, etc.* In German these are generally fem. sing. in *-ik*, in French, in *ique*, in English we generally prefer *-ics*, but treat them as singular: 'mathematics *is* the science of quantity'—'linguistics' is the more etymological name for philology. So there is no objection to say *Orthodontics* is an important branch of physiology. As your study progresses, you may have need of *Orthodonty* as the name for a normal or ideal condition of dentition or dental development, as opposed to any number of other *Odontics* denoting kinds of irregular conditions. I think that the study of all these would properly enough be included in the term 'Orthodontics,' because all these are related to or connected with 'orthodonty,' as the normal or ideal form to which they approximate, or from which they deviate. I do not see any ground for using a quasi-Latin form in *-odontia* in writing English. Yours very truly,

"J. A. H. MURRAY."

The question now is, shall Americans stick to the term "orthodontia," or adopt the word "orthodontics," or is there some other term better than either that can be adopted and universally used?

Some years ago Dr. C. S. Case suggested the term "Dental Orthopedia" in place of "Orthodontia," believing it a more comprehensive and applicable title. He stated that originally the word "orthopedia" was chosen to indicate that branch of general surgery which has for its object the straightening or correcting deformities of children by the moderate application of force to the undeveloped and yielding bones. Orthopedic surgery in its present and broader sense includes the correction of all deformities accomplished in a similar manner. He further stated that "Orthopedic Dentistry," or "Dental Orthopedia," therefore would plainly specialize the art to the correction of all dental and facial deformities accomplished by orthopedic movements of the teeth and connecting bones.

Which is the best term to adopt?

Orthodontists should take the question up for a thorough discussion and decide on the best term to adopt and then use that term universally.

THE DIFFERENCE

A year ago we had occasion to call attention to the manner in which the meeting of the Institute of Dental Pedagogics was noticed in the St. Louis newspapers during the time their meeting was in progress in that city. One newspaper displayed the headline, "The Institute of Dental Pedagogics meaning Society of Tooth Carpenters." Another, "Tooth Pullers in Session," etc.

This year, during the holidays, this society of distinguished men met in Toronto, Canada, and this is what *The Toronto World* had to say:

WE SALUTE THE DENTIST

"The greatest friend of humanity in these days is the doctor, whether as a hygienist in connection with public health and the prevention of epidemics or other disease; or as a general practitioner; or as an operating surgeon; or as a dentist.

"We believe the dentist can and does more for the race than any other branch of what for a better term we call the healing art. If you asked us to say what was at the bottom of good health in this country of ours we would say good teeth and good footwear. The dentist can save the people's teeth or give them new ones, and teeth are behind digestion, and digestion means health. Therefore, *The World* pays tribute to the master dentists now in the city and the splendid new college they are opening for purposes of instruction.

"The dentist is worthy of all the deference and respect that we pay to the doctor; he is a true friend of the race, and if you get to him in time he can give you more for your money than any one we know of."

Note the difference. One, the thoughtless report of a careless or ignorant reporter or editor and the other from a thoughtful newspaper man who appreciates the standing of dentistry in the world today.

We are sure the profession generally will join us in expressing thanks and appreciation for this just tribute and we hope that the newspapers of other cities in reporting our conventions hereafter will "go and do likewise."

OFFENSIVE BREATH

If a dentist could get the odor of his own breath he would realize more fully what his patients, at times, have to endure.

Coming as closely in contact with people as does the dentist he should use the utmost care in keeping his breath sweet.

While keeping his mouth in as sanitary a condition as possible is essential, it is not all he should do to control the odor of the breath. Diet is one of the most important things to care for. A person who eats much meat will almost invariably possess an offensive breath.

Pay attention to your diet; eat in moderation; keep the bowels freed from products of decomposition; drink a copious amount of water each day, and this in addition to the regular mouth toilet and frequent use of an unirritating delicately flavored mouth wash will do much toward controlling an otherwise offensive breath.

LAUNCHING OF THE NATIONAL CAMPAIGN FOR ORAL HYGIENE.

Probably the greatest meeting of the kind ever held took place in Cleveland, Ohio, March 18, 1910. The event was the dedication and formal opening of six school clinics in the city of Cleveland, and the launching of a national campaign for Oral Hygiene. Speakers of prominence were there from different sections of the United States and the large meeting place was packed by four or five thousand people. The meeting was considered a great success and THE SUMMARY will later give its readers the benefit of the papers and speeches presented on this occasion.

SOCIETY·ANNOUNCEMENTS

West Virginia State Dental Examination.

The West Virginia State Dental examination will be held at Wheeling, W. Va., on June 8th, 9th and 10th, 1910. Applicants for examination must file their applications, accompanied by the fee of $25.00. For blanks and other information write J. Fleetwood Butts, Secy., Charleston, Kanawha County, W. Va.

National Association of Dental Faculties

The National Association of Dental Faculties will meet at the Hotel Shirley, Denver, Colorado, Monday, July 25, at 10 o'clock a. m. The Executive Committee will meet to consider business of the Association at 9 o'clock a. m. on the same day.

The Hotel Shirley is connected by bridge with the Savoy, where the meeting of the National Association of Dental Examiners takes place on the same date.

The rates will be $2 a day for one and $3 for two persons in one room, European plan. Large rooms for one or two persons, with private bath, $4 and $5 a day.

B. HOLLY SMITH,
Chairman Executive Committee N. A. D. F.

New Jersey State Dental Society

The Fortieth Annual Meeting of the New Jersey State Dental Society will convene in Asbury Park, N. J., at the "New Casino," July 20th, 21st, 22nd and 23rd, 1910. This is to be the largest meeting ever held; two days will be devoted to difficult and interesting clinics, which should not be missed. Many fine and instructive papers to be read.

Hotel Columbia will be the headquarters of the society.

Asbury Park is ideal for the meetings of the Society, with its ocean for bathing and many commodious hotels. The Casino is on the beach front, large and cool. The entire floor of the Casino is to be leveled for the exhibits which will be many and varied and everything new will be shown. Asbury Park can be readily reached by rail, boat or motor, and will be a good resort for the visitors to bring their families who will find much entertainment of high class while they attend the meetings. No one should miss this meeting. Prospective members, ethical practitioners of other states and members of local societies are cordially welcome. For further information inquire of the secretary.

CHARLES A. MEEKER,
29 Fulton St., Newark, N. J.

Susquehanna Dental Association of Pennsylvania

The forty-seventh annual meeting of the Susquehanna Dental Association of Pennsylvania will be held at Hotel Oneonta, Harvey's Lake, Luzerne County, Pa., Tuesday, Wednesday, Thursday, May 24, 25, 26, 1910.

Harvey's Lake is a beautiful mountain resort, twelve miles from Wilkes-Barre, and the Oneonta is a modern summer hotel.

An excellent program of papers, clinics and exhibits is being prepared and among those who will participate are Drs. V. H. Jackson, New York; E. C. Kirk, Louis Jack, E. T. Darby, H. C. Register, J. G. Lane, Philadelphia, and C. S. Van Horn, Bloomsburg

Exhibitors desiring space should address Dr F. L. Davenport, N. Franklin St., Wilkes-Barre. All other communications should be sent to the chairman of Executive Committee, Dr. A. E. Bull, So. Washington St., Wilkes-Barre.

All ethical practitioners are cordially invited to attend.

EDMUND J. DONNEGAN, *Recording Secretary,*

Lansing, Mich.

Central Michigan Dental Society, Sixth District

The regular spring meeting of this Society will occur this year on Wednesday, April 27th, at Lansing, Michigan, the place of meeting being Hotel Downey.

One day session. E. L. YALE, *Secretary.*

Louisiana State Dental Society

From a personal letter from Dr. J. A. Gorman, we learn that the meeting of the Louisiana State Dental Society will take place May 9, 10, 11, instead of 16, 17, 18 as originally intended. This meeting occurs immediately following the meeting of the Southern Branch of the National Dental Association, which takes place at Houston, Texas, May 4, 5, 6. The Louisiana dentists with their usual hospitality extend a most cordial invitation to all who attend the Houston meeting to stop at New Orleans and attend the state meeting. This gives visiting dentists an excellent opportunity to visit historical New Orleans and other points in the vicinity. Special railroad rates can always be had to New Orleans, and special hotel rates will be provided. Headquarters of the Louisiana Society will be at the Grunewald Hotel, where the meeting will be held. The New Orleans dentists are planning a splendid entertainment, and all visiting dentists will be royally cared for. For further particulars write J. A. Gorman, 1108 Maison Blanche, New Orleans, or A. L. Plough, Cor. Sec., New Orleans.

Southern Minnesota Dental Society

The twent-fifth annual meeting of the Southern Minnesota Dental Society will be held in the Saulpaugh Hotel, Mankato, Minn., April 11th, 12th and 13th, 1910. C. A. HINTZ, *Secretary.*

Wisconsin State Dental Society

The Fortieth Annual Meeting of the Wisconsin State Dental Society will be held at Ashland, Wis., July 12, 13, 14 and 15th, 1910. Dr. Harvey N. Jackson, president, Wells Bldg., Milwaukee, Wis.; Dr. M. L. Christensen, secy., Oshkosh, Wis.

Oral Hygiene Program, Southern Branch National Dental Association

The Oral Hygiene committee of the Southern Branch of the National Dental Association met in New Orleans on Feb. 5th, to consider the ways and means of inaugurating a propaganda of popular education in Oral Hygiene and Dental Prophylaxis for the Southern Branch territory.

It endorsed the program which the National's Oral Hygiene Committee has adopted, and constituted itself an auxiliary of the National Association's committee.

It proposed to undertake the establishment of Oral Hygiene headquarters in one city of as many of the states in the Southern Branch territory as possible. In the organization of these cities they will follow, in a general way, the Cleveland Plan.

It proposes to make up a standard equipment for public lecturers by the time of the next meeting of the Southern Branch. All persons having slides, models, drawings or illustrative paraphernalia of any kind which would add to such an exhibit will confer a favor by communicating with the chairman or any member of the committee.

Inasmuch as the president of the Southern Branch placed an afternoon and an evening session of the Houston meeting at the disposal of the committee they decided upon the following program:

FOR THE AFTERNOON SESSION

A ten minutes' paper on "The State Association's Part in the Oral Hygiene Propaganda," by Dr. R. D. Griffis, Paris, Texas, representing the Texas State Dental Association.

A ten minutes' paper by Dr. Justin D. Towner, Memphis, Tenn., on "The Preparation of the Undergraduate for Teaching Oral Hygiene to the Public."

A ten minutes' paper by Dr. Wm. Ernest Walker, New Orleans, La., on "Teaching Oral Hygiene in the Public Schools."

Report of the committee's work by Dr. J. P. Corley, Greensboro, Ala.

These papers will be followed by five-minute discussions by twenty-five or thirty men from various parts of the country who have done conspicuous work in this field.

The details of a program for the future year will then be submitted and acted upon by the Association.

FOR THE EVENING SESSION

Written invitations will be extended to the Clergy, Physicians, Board of Education, Chamber of Commerce, City Officials, Teachers and a number of Educational and Philanthropic celebrities. An invitation to the general public will be extended through the press. The local committee of arrangements will provide a musical program which will be presented in connection with the illustrated lectures on Oral Hygiene.

Dr. Griffis will give a brief history of Oral Hygiene for the public. Dr. Corley will give a resume of the present forward movement. Dr. Towner will give an illustrated lecture on the care of the teeth, and Dr. Walker will illustrate a lecture on the foundation of facial harmony.

At the close of the session the members will be tendered an informal reception by the ladies of Houston.

In addition to the foregoing the committee hopes to have an Oral Hygiene clinic separate from the general clinic, at which the most celebrated men in the country will give both table and chair clinics on all phases of the subject. Any one wishing to contribute to this clinic will please confer with the committee as soon as possible. The committee would appreciate suggestions from any source.

J. P. CORLEY, *Chairman,*
WM. ERNEST WALKER, *Secy.,*
JUSTIN D. TOWNER,
R. D. GRIFFIS,
Committee Oral Hygiene, Southern Branch N. D. A.

National Association of Dental Examiners

The Twenty-eighth Annual session of the National Association of Dental Examiners will be held at the New Hotel Savoy, Denver, Colorado, beginning Monday, July 25th, at 10 a. m. The rates will be $2.00 per day for one and $3.00 per day for two persons in room, European plan; large room for one or two, private bath, $4.00 and $5.00 per day. Meeting and committee rooms at the service of the Association free, and every accommodation extended. An early reservation by mail is requested, the time being the busy season. A full representation from every state in the United States is earnestly desired.

J. J. WRIGHT, D. D. S., *Pres.,*
Wells Bldg., Milwaukee, Wis.

CHARLES A. MEEKER, D. D. S., *Secy.,*
29 Fulton St., Newark, N. J.

Louisiana State Dental Society

The thirty-second annual meeting of the Louisiana State Dental Society will be held in the Grunewald Hotel, New Orleans, La., May 9, 10, 11, 1910.

Southwestern Michigan Dental Society

The next meeting of this society will be held in Coldwater, April 12, 13, 1910.

C. W. JOHNSON, *Secy.*

Eastern Indiana Dental Association

The Eastern Indiana Dental Association will hold its thirty-ninth annual meeting at Cambridge City, Ind., April 12 and 13th. 1910.

A. O. MARTIN, *Secy.*,
Richmond, Ind.

Illinois State Dental Society

The forty-sixth annual meeting of the Illinois State Dental Society will be held in Springfield, May 17, 18, 19, 20, 1910. In addition to an especially good list of essays and clinics, an unusually attractive supply exhibit is being planned.

J. F. F. WALTZ, *Secy.*,
Decatur, Illinois.

Kentucky State Dental Association

The forty-first annual meeting of the Kentucky State Dental Association will be held in Louisville, Ky., May 26, 27, 28, 1910. An unusually interesting and profitable program is being arranged for this year, and a cordial invitation is extended to all ethical members of the profession.

W. M. RANDALL, *Secretary*,
Cor. Brook and Broadway, Louisville, Ky.

Lake Erie Dental Association

The forty-seventh annual meeting of the Lake Erie Dental Association will be held at Hotel Rider, Cambridge Springs, Pa., May 17, 18, 19, 1910. All reputable practitioners are cordially invited to attend.

V. H. MCALPIN, *Secy.*

Northern Ohio Dental Association

The fifty-third annual meeting of the Northern Ohio Dental Association will be held in Hotel Secor, Toledo, Ohio, June 7, 8, 9, 1910. A splendid program has been prepared and the meeting promises to be the best in the history of the Association. Mark these dates off from your appointment book and arrange to attend.

J. W. MCDILL, *Sec.*,
10406 Euclid Ave., Cleveland, Ohio.

Canadian Dental Society Meetings

Canadian Dental Association and Ontario Dental Society combined convention, Toronto, Canada, May 31, June 1, 2 and 3, 1910.

National Dental Association

14th Annual Session, Denver, Col., July 19th to 22nd.

OFFICERS AND COMMITTEES, 1909-10

President—Burton Lee Thorpe, 3605 Lindell Boulevard, St. Louis, Mo.

Vice-President—West—W. T. Chambers, California Building, Denver, Colo.

Vice-President—East—C. W. Rodgers, 165 Harvard Street, Dorchester, Mass.

Vice-President—South—T. P. Hinman, Atlanta, Ga.

Corresponding Secretary—H. C. Brown, 185 E. State Street, Columbus, Ohio.

Recording Secretary—Charles S. Butler, 267 Elmwood Avenue, Buffalo, N. Y.

Treasurer—A. R. Melendy, Deaderick Building, Knoxville, Tenn.

Executive Committee—J. D. Patterson, Chairman, Keith and Perry Building, Kansas City, Mo.

First Division—Committee on Arrangements—J. D. Patterson (*1911), Keith and Perry Building, Kansas City, Mo.; C. M. Works (*1912), Ottumwa, Iowa; W. G. Mason (*1912), Tampa, Fla.

Second Division—*Committee on Credentials and Auditing*—V. H. Jackson (*1912), 240 Lenox Avenue, New York, N. Y.; H. B. McFadden (*1911), 3505 Hamilton Street, Philadelphia, Pa.; M. F. Finley (*1910), 1928 "I" Street, N. W., Washington, D. C.

Third Division—Committee on Voluntary Essays—L. Melsburger (*1910), 85 North Pearl Street, Buffalo, N. Y.; F. B. Kremer (*1910), Masonic Temple, Minneapolis, Minn.; C. J. Grieves (1911), Park Avenue and Madison Street, Baltimore, Md.

(*Term expires.)

Executive Council—H. J. Burkhart, Chairman, Batavia, N. Y.; A. H. Peck, 92 State Street, Chicago, Ill.; B. Holly Smith, 1007 Madison Avenue, Baltimore, Md.; W. E. Boardman, 419 Boylston Street, Boston, Mass.; C. L. Alexander, 203 S. Tryon Street, Charlotte, N. C.; Burton Lee Thorpe, C. S. Butler (*ex-officio members*).

SECTIONS

SECTION 1.—Geo. H. Wilson, Chairman, Schofield Building, Cleveland, Ohio; Stanley L. Rich, Vice-chairman, Jacksen Building, Nashville, Tenn.; B. Frank Gray, Secretary, 1003 Security Building, Los Angeles, Cal. Prosthetic Dentistry, Crown and Bridge Work, Orthodontia, Metallurgy, Chemistry and allied subjects.

SECTION 2.—L. L. Barber, Chairman, 718 Spitzer Building, Toledo, Ohio; Frank I. Shaw, Vice-chairman, 624 Burke Building, Seattle, Wash.; F. L. Platt, Secretary, Elkan Gunst Building, San Francisco, Cal. Operative Dentistry, Nomenclature, Literature, Dental Education and allied subjects.

SECTION 3.—Wm. Carr, Chairman, 35 West 46th Street, New York City; L. F. Luckie, Vice-chairman, Birmingham, Ala.; Richard Summa, Secretary, 410 Metropolitan Building, St. Louis, Mo. Oral Surgery, Anatomy, Physiology, Histology, Pathology, Etiology, Hygiene, Prophylaxis, Materia Medica and allied subjects.

Clinics—F. O. Hetrick, Chairman, Ottawa, Kan.; Howard S. Seip, Vice-chairman, Allentown, Pa.; L. A. Crumley, Secretary, Birmingham, Ala.; J. E. Chase, Ocala, Fla.; George E. Savage, Worcester, Mass.; J. J. Sarrazin, New Orleans, La.; H. H. Sullivan, Kansas City, Mo.; A. O. Ross, Columbus, Ohio; J. D. Towner, Memphis, Tenn.; J. B. Howell, Paducah, Ky.; L. B. McLaurin, Natchez, Miss.; J. H. Lorenz, Atlanta, Ga.; F. L. Hunt, Ashville, N. C.; J. G. Fife, Dallas, Tex.; W. G. Dalrymple, Ogden, Utah; R. D. Robinson, Los Angeles, Cal.; C. S. Irwin, Vancouver, Wash.; F. R. Henshaw, Indianapolis, Ind.; G. H. Nottage, Portland, Ore.; F. L. Wright, Wheeling, W. Va.; R. L. Simpson, Richmond, Va.; A. P. Burkhart, Buffalo, N. Y.; S. W. Bowles, Washington, D. C.; T. M. Hampton, Helena, Mont.; J. Bruce Perrin, Des Moines, Ia.

Local Committee of Arrangements—E. R. Warner, Chairman, 401 California Building, Denver, Col.; H. A. Fynn, Vice-chairman, 500 California Building, Denver, Col.; W. P. Smedley, 604 California Building, Denver, Col.; W. A. Brierley, 36 Barth Block, Denver, Col.; W. W. Flora, Colorado Springs, Col.; W. T. Chambers (*ex-officio*), California Building, Denver, Col.

The Chairmen of Sub-Committees—*Publicity* H. F. Hoffman, 612 California Building, Denver, Col.

Clinic—A. W. Starbuck, Haish Building, 14th and Arapahoe, Denver, Col.

Exhibits—John Steele, 632 Empire Building, Denver, Col.

Entertainment—I. C. Brownlie, 404 California Building, Denver, Col.

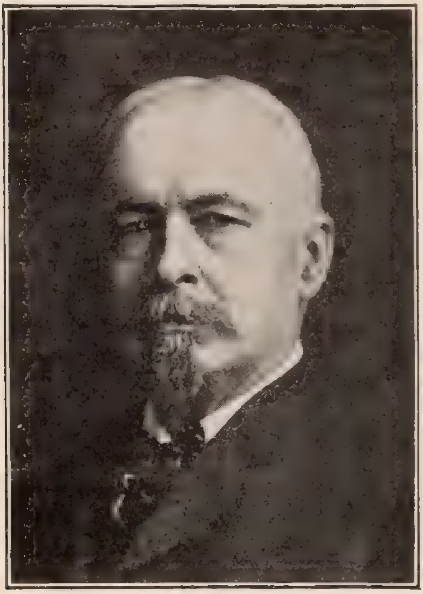
Western Pennsylvania Odontological Society.

The Odontological Society of Western Pennsylvania will hold its 29th annual meeting at the Monongahela House, Pittsburg, Pa., April 12th and 13th. The program includes papers by Dr. J. Leon Williams, of London, England; Dr. J. P. Buckley, of Chicago, and others. A large list of clinics is being prepared and the "biggest ever" meeting is expected. A large hall is reserved for exhibitors and many new and interesting exhibits will be shown. Space may be reserved by application to Dr. W. W. Booth, Carnegie, Pa. All ethical dentists are invited to attend this meeting and join the Society. For information address: Program Committee: Dr. C. E. Peters, Fulton Bldg., Pittsburg; Dr. J. H. Crawford, Diamond Bank Bldg., Pittsburg, Pa. Exhibit Committee: Dr. W. W. Booth, Carnegie, Pa. Membership Committee: Dr. Jno. F. Biddle, Arch St. N. S., Pittsburg, Pa.

Xi Psi Phi Banquet.

The annual dinner of the New York Alumni Association, Xi Psi Phi Fraternity will be held at the Hotel Manhattan, Madison Avenue and 42nd Street, New York City, at 8 p. m. on Saturday, April 2, 1910. Arrangements have been made for every alumnus residing in or about New York City, and it is hoped that all will take advantage of this opportunity to meet their old classmates again.

OUR LECTURES AND OUR LECTURER.



John Worthington Dowd, LL. D.
Our Lecturer.

We are now ready to fix dates for lectures before Teachers' Associations, public schools and the public generally, and request correspondence looking to this end from dental societies and individual dentists in Ohio, Michigan and Indiana.

For this work we have secured the services of John W. Dowd, LL. D., an educator and lecturer of force, ability and wide experience. Mr. Dowd has made a careful study of all branches of the subject of dental education, and is prepared to present them in a popular, interesting and convincing manner.

The lectures are illustrated by a large number of accurate and beautiful slides, made from photographs of subjects supplied by some of the ablest men in the profession, thrown on the screen by the finest stereopticon (Bausch & Lomb) possible to procure, and are presented in a manner sure to please and instruct the average audience.

The co-operation of every dentist within the territory mentioned, who is interested in the great cause of popular education, is most earnestly invited.

In reply to many questions as to the expense, necessary arrangements and other particulars, we have formulated the following:

Things That We Will Do.

We supply the lecturer, the lecture, the lantern and the slides.

We supply press notices and cuts for advertising the lectures in local newspapers.

We supply circulars and tickets for distribution to school children, parents and others, advertising the lectures and creating popular interest.

We pay our lecturer for his services and all of his expenses, including his hotel bills. No part of this expense is asked from dentists, nor will any be accepted.

Things For Dentists to Do.

Form a local organization, including as many dentists as possible, and appoint a small committee to look after the part of the work that we cannot do. Do this at once.

The purpose of this committee is to make all necessary arrangements.

Get co-operation of school board.

Arrange approximate date.

Secure and pay rent of hall.

Arrange to have teachers distribute printing and tickets among their pupils. These tickets are free, of course, and admit the entire family. Establish a few centers where tickets may be obtained.

Arrange for use of electric current and have proper connection made.

See that lecture is well advertised in local papers and announced by teachers daily until date of lecture.

See that no dentist makes himself prominent in the work, assumes credit, or secures any personal advertising.

Furnish man to assist our lecturer, operate lantern, etc., at time of lecture.

Furnish a table not less than 24x42 inches in size and 3 ft. 6 in. high.

As soon as committee is appointed and at least part of the work is done, write us, giving us:—

Name of chairman of committee.

Size of the hall.

Seating capacity of hall.

Number of pupils in the public schools.

Kind of electric current, whether direct or alternating. State whether current is available in daytime. Give voltage.

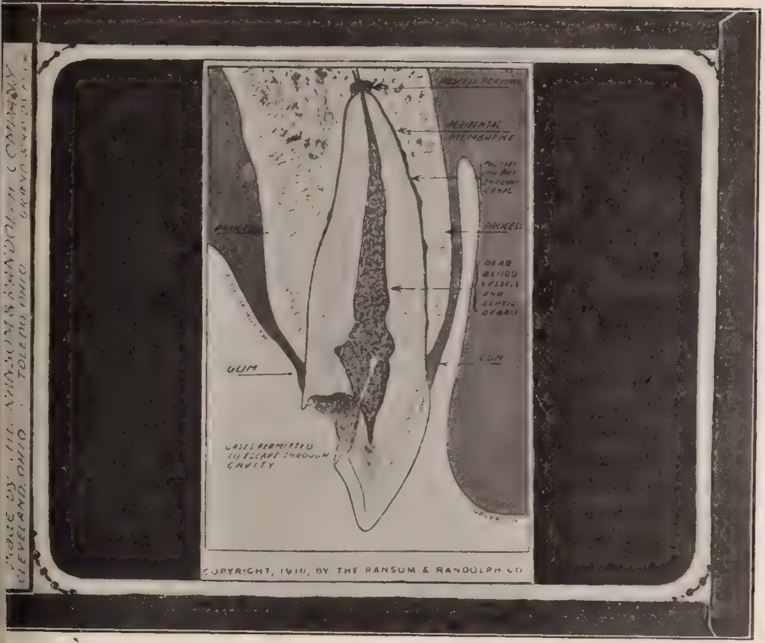
When lecture is wanted, giving approximate date.

The Ransom & Randolph Co. is not to be referred to nor connected with these lectures in any manner. When necessary to explain their origin, say they are backed by a magazine called The Dental Summary.

As soon as we hear from local committees we will complete arrangements and proceed with our part of the work.

Now—all together, for the common good. Address

Educational Bureau,
The Dental Summary,
Toledo, Ohio.


ABSCESS FORMING
PERICEMENTAL MEMBRANE
PROCESS
DEAD BLOOD VESSELS AND SEPTIC DEBRIS
GUM
PULP
GUM
GASES PERMITTED TO ESCAPE THROUGH CAVITY
COPYRIGHT, 1910, BY THE RANSOM & RANDOLPH CO
MADE BY THE RANSOM & RANDOLPH COMPANY
CLEVELAND, OHIO · TOLEDO OHIO · GRAND RAPIDS

Lantern Slides for Educational Work

In response to a very real and earnest demand from many readers who are interested in the great educational movement, we have fitted ourselves for the manufacture of slides and are now prepared to supply the following at the uniform price of 50 cents each, except colored subjects, which are $1.25 each.

All slides are 3¼x4, and will fit any standard American-made stereopticon.

LIST OF SLIDES (In ordering always specify class and number.)

Class A—Anatomical.

-Skull at birth.
-Skull at nine months after birth.
-Tooth formation at about eleventh month.
-Tooth formation at about eighteenth month.
-Tooth formation at about three and a half years.
—Tooth formation at about 6 years, front view.
—Tooth formation at about 6 years, side view.
-Tooth formation at about seventh year.
-Tooth formation at about eleventh year.
-Tooth formation at about thirteenth year.
-Adult mouth with all teeth in place.
-Jaw in old age.
-Nerves and blood vessels of teeth, front view.
-Nerves and blood vessels of teeth, side view.
-Facial distribution of fifth pair of nerves.
-Veins and arteries.
-Alimentary canal.
-Skull with perfect set of teeth.

Class B—Sectional Views.

(Colored Subjects $1.25 each.)

Perfect tooth, process, gum and lip in color.
Tooth, process, gum and lip in colors, showing beginning of caries.
Tooth, process, gum and lip in colors, showing same decay as in B-2, but further advanced, and formation of abscess and pus.
Tooth, process, gum and lip in colors, showing same cavity as in B-2 and B-3, pus escaping through fistula.
Tooth, process, gum and lip in colors, showing abscess cured and tooth filled.
Sections of three molars and occlusal surfaces, showing progressive caries.
Diagram of eight upper and eight lower perfect teeth with diagramatic occlusion.
Section of perfect tooth, showing vascular and nervous circulation.

lass C—Malformations and Restorations.

Profile of girl's face before regulation of teeth, showing effect of extraction of sixth year molar.
Profile of cast of C-1 before regulation, showing effects of extraction of sixth year molar.
Same as C-1 after regulation.
Same as C-2 after regulation.
Profile of girl's face with mal-occlusion as a result of thumb sucking and of same girl with malocclusion corrected.
Child showing malocclusion caused by sucking three fingers. (20 pounds gained during treatment due to restoration.)
Profile of King Alphonso of Spain, showing effects of malocclusion, undershot.
31—Profile of Queen Victoria of Spain, showing effects of malocclusion, overshot.
50—Appliance for prevention of mouth breathing during sleep.

Class D—Bacteria.

1—Pericementitis Baccili.
2—Pneumococci.
3—Mouth Baccili.
4—Tooth Decay—Caries Baccili.

Class E—Cleaning of Teeth.

1—Cleaning outside of upper front teeth.
2—Cleaning inside of upper front teeth.
3—Cleaning inside of upper side teeth.
4—Cleaning outside of lower front teeth.
5—Cleaning inside of lower front teeth.
6—Cleaning inside of lower side teeth.
7—Cleaning inside of side teeth.
8—Drawing showing effects of horizontal brushing of teeth.
9—Hygienic outfit—brushes, powder and floss.
10—How the brushing of the teeth is taught in some schools.

Class F—What Dentistry Can Do.

1—Restoration of broken down roots.

Class G—Miscellaneous Slides.

1—"It didn't hurt a bit."
2—List of teeth (temporary and permanent), showing years when due.
3—Chart showing want of masticating power in 80 per cent. of children at 12 years.
4—Cast showing effects of extraction of sixth year molar.
5—Examining school children's teeth in a Cincinnati school.
6—A tooth factory in operation—night view.
7—A tooth factory with part of 500 employees.
8—.
9—Crying child (toothache).
10—Same child as in G-9, but laughing.
11—Interior of modern dental office.
12—Interior of modern dental office.
13—Interior of modern dental office.
14—Cast, showing beginning of decay.
15—Cast, showing decay further advanced.
16—Cast, showing decay still further advanced.
17—Cast, showing decay still further advanced.
18—Cast, showing ravages of decay.
19—Drawing, showing advanced stage of pyorrhea, upper jaw.
20—Drawing, showing advanced stage of pyorrhea, lower jaw.
21—Drawing, a normal dentition at 7 years, dissected.
22—Drawing, a normal dentition at 7 years, palatal view.
23—Drawing, a normal adult dentition.
24—Drawing, care of teeth—brushing and silking

NEWS and OPINIONS

Opening of the National Campaign for Oral Hygiene.

For many months THE DENTAL SUMMARY through its literary bureau, educational department and lecture course has held the skirmish line in the great movement for popular education in oral and dental hygiene. It is, therefore, with great pleasure that brief notice is here given of the formal opening of the national campaign at Cleveland, Ohio, on Friday, April 18, reserving full report for our June number, which will be especially, if not wholly, devoted to this great subject.

Representatives of the National Dental Association and of the Ohio State Dental Society, through their respective Committees on Hygiene, and of the Cleveland Dental Society, together with many volunteers in the great work, took part in the formal opening of the campaign and in the dedication of six clinics that have been opened in connection with the Cleveland public schools.

More than a hundred visiting dentists, representing nearly every state in the Union, attended the opening of the campaign. Nearly 200 covers were laid for the banquet, which was held at the Colonial Hotel. Members of the Oral Hygiene Committee of the National Dental Association spoke. Dr. W. A. White, of Phelps, N. Y., spoke on "Oral Hygiene;" Dr. E. P. Dameron, of St. Louis, on "Examining Boards and Boards of Regents in Their Attitudes Toward Our Work."

Dr. W. G. Ebersole, chairman of the Oral Hygiene Committee of the National Dental Association, and chairman of the Education and Oral Hygiene Committee of the Cleveland Dental Society, introduced former Governor Myron T. Herrick as chairman at the evening session.

Dr. Ebersole, in speaking on "The Importance of Oral Hygiene," impressed upon his audience the importance of educating the public in the correct use of the teeth and mouth. He explained the system to be followed in Cleveland.

Dr. W. A. Evans, commissioner of health of Chicago, spoke at length on "The Relation of Conditions of the Oral Cavity to the Health and Morals of School Children." He told of the steps being taken in Chicago for the betterment of the public health, describing the good results known to have been obtained through care of the teeth of school children.

Dr. H. C. Brown, of Columbus, representing Governor Harmon, spoke on "The Attitude of the State Government Toward Public Health," declaring that ignorance of true conditions was responsible for the lethargy displayed by legislators toward enacting corrective laws along the lines of oral hygiene.

At the first convention of dentists and teachers in the afternoon in Grays' armory, Dr. G. C. Ashmun, president of the school board, presided.

School Superintendent W. H. Elson, delivered the address of welcome. Dr. J. W. Dowd, former superintendent of Toledo (O.) schools, said that health is the country's supreme asset. He believed Roosevelt's abounding health due to "those splendid teeth of his."

"If a man took his station in a Euclid avenue window and there shot wildly, indiscriminately, into the throng of passers by," said Dr. Dowd, "he would do no more harm than those persons with diseased mouths, who walk everywhere, breathing into the faces of their fellows.

"In Cleveland, I am told, today there are 12,000 persons marked for death by the great white plague. We will never conquer that plague as we should until we teach our children how to combat disease.

Supervisor H. C. Muckley said that affected mouths and teeth make digestion poor, that children therefore become harsh and sour in disposition, that the man who does not feel good ''within himself'' wants to press it on the world —and that the end is feeble citizens, unsound government and anarchy.

Other speakers in the afternoon were Dr. Richard Grady, of Annapolis, Md., dental surgeon of the government naval academy; Dr. W. A. Price, of Cleveland, and Dr. J. P. Corley, of Greensboro, Ala., and Mrs. Sarah E. Hyre. A chorus of seventy school boys sang.

The Cleveland Dental society met its guests at dinner in the Colonial Hotel at 5 o'clock in the afternoon. The evening convention began at 8 o'clock in the Grays' armory.

Ex-Gov. Myron T. Herrick presided, and Mayor Baehr welcomed the visitors. The mayor promised his aid in obtaining necessary money appropriations. Dr. B. L. Thorpe, of St. Louis; Dr. W. G. Ebersole, of Cleveland, and Dr. W. A. Evans, of Chicago, were speakers. Dr. H. C. Brown, of Columbus, came as personal representative of Gov. Harmon, and Dr. C. W. Wille, of Washington, as personal delegate from President Taft. Dr. Wille said his orders were to be in a receptive mood, to make for Mr. Taft's benefit a complete record of what was done. The Central and Lincoln High Girls' Glee club sang.

A very happy incident of the meeting was the presentation to Dr. W. G. Ebersole of a beautiful diamond pin, representing a ''Cup of Cold Water,'' inscribed ''In His Name,'' in recognition of his untiring services as chairman of the Oral Hygiene Committee. Much of the success attending the opening of the campaign was due to his efforts, many of which were put forth at a time when serious ill health would have been ample reason for many a man to rest on his oars. As a matter of fact this auspicious opening may be regarded as a personal triumph over many and serious obstacles, human and otherwise.

The Northern Ohio Meet.

Turn over the leaves of your calendar at once until you come to the blessed month of June, the month of roses and weddings and long, warm days. Having found the leaf, run your finger along the second row of figures until you come to Tuesday, Wednesday, Thursday, 7th, 8th and 9th.

Then reach for your red pencil and draw a heavy red circle around each of these dates.

Next, sit down and write a ''Notice'' to the effect that your office will be closed those three days and post it on your wall —do all these things *now*, before you forget them—provided you are fortunate enough to live within a day's journey of Toledo; for on those days occurs the annual convention of the Northern Ohio Dental Society right here in Toledo, and you're coming; we expect you; we've undertaken a big share of the work of making this meeting the biggest and the best ever held in the history of this society and we need your presence to do it.

Headquarters and all meetings are to be in the new and beautiful Hotel Secor, where arrangements have been made for ample accommodations.

We shall be glad to have you write *now* and tell us you are coming. Full particulars, programs, etc., later.

No better magazine for the waiting room reaches this office than *The Strand*, published by The International News Co., New York. The April number contains two serial stories, eight short stories and eight articles from the pens of popular authors. Buy a copy from your news dealer and see how popular it is with your patients.

THAT POSTAL DEFICIT.

By Wilmer Atkinson, editor Farm Journal.

Though it seems to be a settled idea in some minds that the government loses on second-class matter, we are inclined to believe it is all a mistake. And does second-class matter really cost eight and two-third cents per pound?

Let us make inquiry: In 1901 the total weight of second-class matter was 429,444,573 pounds, and the deficit was $3,923,727.48; by 1909 the total weight had increased 294,161,297 pounds. Now, if this increased weight had cost eight and two-third cents per pound, the deficit should have been $28,435,591.06, but it was only $17,479, 770.47. Now, we have high authority for the statement that the rural delivery system involved a loss of $28,000,000. It will not do to charge the loss against second-class matter and against free delivery, too. If there really was a loss of $28,000,000 on rural delivery then there was no loss at all, but a gain of $10,520,229.53 on second-class matter.

Again, the total weight in 1907 was 712,945,176 pounds; in 1908 it had fallen to 694,865,884, a matter of 18,079,292 pounds; yet the deficit was $10,219,242.52 greater than in 1908. This is ascribed to an increase of salaries, chiefly for rural carriers, but even allowing for that there was an increase of deficit, while 18,079,292 pounds were shut out of the mails.

Then we have the testimony of the Postal Commission to the effect ''that within the radius of average newspaper circulation and possibly within the radius of average for periodical circulation for bulk subscription service, the rate of one cent a pound is approximately adequate compensation.''

In Canada the postage rate is only one-quarter of a cent a pound, recently reduced from a half cent, and second-class matter goes free within a radius of forty miles, recently increased from twenty miles. The Dominion is widely extended and sparsely settled, yet the past year shows a surplus for the postal service of $293,700. From the above evidence I think we will have to conclude that second-class matter does not cost eight and two-thirds cents per pound. It can be demonstrated in other ways, but this seems scarcely necessary.

Robberies.

Feb. 4—Dr. S. C. McCorkle, of Milwaukee, Wis., $50 worth of instruments.

Feb. 14—Dr. Charles Hien, of Woonsocket, R. I., a small quantity of gold, used in filling.

Gold to the amount of several thousand dollars, has been stolen from the Omaha, Neb., dentists in the last few months.

A series of expertly executed robberies Feb. 22 marks the latest of the long series of depredations. On this last expedition the robbers obtained close to $1,000 worth of gold in amalgam, fillings and dental work under construction. The actual loss from the work involved puts the figure much higher. The robberies have in several instances been reported to detectives who have for weeks been persistently but unsuccessfully seeking the accomplished thieves.

Among the victims are:

Whinnery & Wallace	$300.00
W. H. Sherraden	125.00
J. W. Novak	89.00
Harry Foster	50.00
P. J. Hunter	45.00
R. W. Reid	18.25
G. W. Todd	10.00
F. N. Connor	20.00
A. P. Johnson	.....
J. J. Foster	.....
L. J. Schneider	.....

The following dentists in Louisville, Ky., were robbed March 1: Dr. C. F. Boggess, Dr. Harry Lee, Dr. L. P. Long, Dr. W. H. McCall, Dr. C. D. Schweitzer, Dr. C. R. Shacklette, Dr. W. S. Smith, Dr. M. Thomas, Dr. Steinberg, Dr. J. H. Baldwin and Dr. J. B. Thompson. Dr. Boggess was the heaviest loser in the Atherton building. He said that his losses would probably amount to about $300 in gold plates, fillings and bridgework. Although the other dentists have not computed their losses as yet, Dr. Boggess said that they had agreed that it would be at least $2,000. The door to Dr. Boggess' reception room was pried open, the lock slipped and all of the cases and desks looted. This is the second robbery that Dr. Boggess has suffered during the past few months, as his country home at Anchorage was entered some time ago and several hundred dollars' worth of clothing and jewelry stolen.

The offices of Drs. Smith, Lee and Baldwin, on the fifth floor, were robbed of about $150 worth of gold. In these offices, as in all of the others, there was left untouched hundreds of dollars' worth of platinum. The thieves evidently did not want this metal, as it would be harder to dispose of than gold. Dr. Shacklette's loss is about $25, and that of Drs. McCall and Schweitzer about $200.

The following dentists in the Masonic building suffered losses: Dr. J. R. Wallace, Dr. C. E. McIlwain, Dr. C. G. Hoffman and Dr. Walter Farrar.

Thieves entered the dental office of Dr. William Sweeney, of Pittsburg, Pa., March 2, and secured instruments and dental gold valued at $1,000.

March 2—Dr. W. C. Honeywell, Johnstown, Pa., loss $30.

Feb. 15—Dr. G. Bayly, Lima, O., loss $60.

Marriages.

Miss Dorothy Farwell Miner, of Rockland, Me., and Dr. Melville F. Francis.

Fires.

March 1—Fire did $300 damage in the dental office of Dr. H. P. McPherson, of Le Roy, N. Y.

Deaths.

Jan. 29—Dr. William B. Cassill, Walla Walla, Wash., age 48 years, died of apoplexy.

Feb. 2—Dr. J. Russell Johnson, of Henderson, Tenn., died from typhoid fever.

Feb. 3—Dr. Thomas Johnson, Wausau, Wis., age 42, died of scarlet fever, after an illness of two days.

Feb. 3—Dr. Dennis F. Keefe, of Providence, R. I.

Feb. 15—Dr. W. F. Holmes, of Kingston, N. Y., of brain fever.

Feb. 16—Dr. J. T. Twilley, of Chestertown, Md., age 84 years.

Feb. 21—Dr. Charles M. Clark, for over 40 years a leading dentist of Brockport, N. Y., aged 66 years.

March 5—Dr. Treat, of Polo, Ill.

March 3—Dr. C. B. Lacey, Sioux City, Ia., aged 32; cause of death, pneumonia.

March 2—Dr. Merit Wells, Indianapolis, Ind., from pneumonia; aged 77 years.

March 4—Dr. J. W. Bartlett, Boston, Mass.; aged 73 years.

Honors to Dr. Eugene S. Talbot.

We have read with much pleasure in *The American Journal of Clinical Medicine* for March, the following:

"Dr. Eugene S. Talbot, the well known dentist-physician and authority on the problem of degeneracy, has been elected to corresponding membership in the Budapest Royal Society of Physicians, the oldest scientific organization of its kind in Hungary. This honor is given as an evidence of the great esteem felt for the doctor by this body because of his well known scientific work, these feelings being rendered more forcible on account of his activity on the occasion of the meeting of the International Medical Congress at Budapest last fall. We extend our congratulations to Dr. Talbot for this well earned honor."

This honor was conferred upon Dr. Talbot by the President and Secretary of the International Medical Congress.

The extra copy of THE SUMMARY received; many thanks for same. Of all the dental magazines I like THE SUMMARY best and think I derive more benefit from it than the others.

With best wishes, I am

Yours very truly,

JAMES B. LESTER.

Cost of Electric Cooking.

A kitchen range suitable for four consists of a hardwood table, finished in mission style, completely wired and ready for connecting with the city lines. The utensils consist of a 2-quart cereal cooker, a 2-quart teakettle, a 3-pint coffee percolator, a 7-inch frying pan, broiler, grid, oven, toaster, and a small water heater. Where the lighting plant does not connect the kitchen outfit free of cost it can be readily done by any electrician at a nominal figure. A separate meter registers the amount of electricity used for cooking purposes. Such an outfit can be economically operated at a cost averaging close to $1.25 a month per person, or $5 a month for four persons. The electric range does not provide hot water, but the continuous-flow water heater is used in connection with it. With this type of water heater, which is attached to the faucet, the operating of the tap turns on the electricity and the water is heated as fast as it is drawn, without a particle of wasted energy. Thirty gallons can be heated in this way for 15 cents.

In one family where gas was obtainable for $1 a thousand feet the average cost per month for cooking by gas was $3.12. For a time all the cooking was done on gasoline stoves; at a cost of 15 cents per gallon for the fuel the average cost per month was $3. A few years before, when gas was impossible, the cooking for this family was done over coal fires at a cost of $7.50 a month. Now the new electric kitchen is used exclusively at an average cost of $6.85, consuming 137 kilowatts a month at a special rate of 5 cents.

Another family of two kept an accurate account and found their bills close to $3.15 a month for electric cooking. When a sister came to live with them the average increased to $4.35 a month. The average cost per person per meal was only $.0143.—*American Review of Reviews.*

Governor Stuart Feb. 16 appointed Dr. John Moffitt, of Harrisburg, Pa., to be a member of the state board of dental examiners.

New Metal Lighter Than Aluminum.

A great chemical factory at Hochst on the Main, Germany, exhibited a new metal at the Frankfort aeronautic exposition that is said to be as strong as the best aluminum alloys and but half as heavy. It is called "elektron" and has a specific weight of 1.8 as compared to 2.9 of the best aluminum. Bolts and bars that would ordinarily be thought of as heavy were placed on exhibition, and when handled seemed as light as papier mache.—*Popular Mechanics.*

In all probability the next legislature will be asked by the Minnesota State Dental Association to amend the requirements for practicing dentistry by adding one year of academic work in some university to the dental college degree.

Alfred Owre, dean of the dental college at the state university, is heartily in favor of the movement and has made a card canvass of the dentists of the state on the subject. Out of 300 replies 290 of the dentists are in favor of the project.

"We want to make the dentists of the state more useful to society, and a broader education will conduce to this end," said Dean Owre. "The medical college requires two years of academic work, and why should not we have at least one year?"

Let fancy endow Adam with the gift of eternal life. Start him, the day of his creation, to piling up silver dollars at the rate of a dollar a minute. Permit him to work incessantly eight hours a day the week long down the ages. He will lack $663,000,000 of having enough money to pay for all the live cattle in the United States in the year 1910.

How Electricity Produces Heat.

Whenever electricity is flowing through a wire the temperature of that wire is more or less raised above the surrounding atmosphere. The amount of heat developed depends upon the nature of the conducting wire and its size. It is a fact that every path through which electricity flows offers some obstruction to its flow. This quality is known as resistivity, and the resistance of a definite length of wire of a given diameter of any material can readily be measured. If in a circuit of low-resistance copper wire a small piece of fine platinum wire, having a very high resistance, is introduced, a current which will barely warm the copper wire will heat the platinum wire white hot. This is because the electricity, so to speak, has to work hard to get past the platinum obstacle in its path, and this work produces heat.

Upon this very principle all the electric heating devices of today are constructed. Take, for instance, the electric chafing dish. Without the above explanation it is difficult for the layman to understand where the heat comes from which cooks the fudge or the Welsh rabbit. One can see no flame, nothing that even looks as though it might be hot, yet the contents of the pan is bubbling away, emitting clouds of steam. When the flexible cord is connected to the electric light socket and the current turned on the electricity flows down the wires in the cord to the ''resistance'' concealed in the bottom of the chafing dish. This ''resistance,'' a leaf of special alloy metal, does not allow the current to pass readily, and the energy expended in over coming this causes it to get very hot.—*American Review of Reviews.*

Beginning with the April issue of *Physical Culture*, a series of articles entitled ''The Jungle Aftermath,'' will be published serially, from the pen of Upton Sinclair, which will create interest throughout the country.

It is fair to assume that an article of this nature written by the above author at this time, will, without question, arouse considerable interest. It is particularly timely in view of the recent agitation in the newspapers throughout the country on the meat question and the high cost of living, of which the author is, without question, an authority.

Agriculture in Spain is very backward. Farming operations hark back to the childhood of the race, to Bible days,—and olive oil and wines prepared for the market in a more or less primitive way are shipped to France and Italy, there to be elaborated, put in bottles and casks with foreign labels, and sold to the world as native products, the return to the Spanish growers being comparatively small. The farmer still plows with a crooked stick and the ancient threshing floor is the usual fanning-mill. Still, the sale of American harvesting machinery is making headway, though slowly.

An Old Proposal.

The *Housekeeper Magazine* recently offered prizes for accounts of interesting proposals. The following, one out of the many printed, has a decidedly pathetic interest:

When I read the requests for interesting proposals, I thought at once, of a paper yellow with age, lying among my mother's papers. I went and drew it from its resting place and read it once again. It was dated February—1861—and worded thus.

My Darling Girl.—

Do not chide me, Mary, for thus addressing you, for have you not read between the lines these many months, my love for you? How dearly I love you, I cannot tell you with a pen. You are my one constant thought, always with me, dearest, night and day, and I feel that I can no longer live without the assurance of your love and that you will become my loved and loving wife. Oh, Mary, do not keep me in suspense but write to me at once. The times are turbulent and unsettled, but I trust this rumor of war and secession will soon dissipate. Our State, may I call it so, has not seceded, and I trust will remain loyal to the Union, as I shall.

With love untold, I await your answer.
Your loving
Ferdinand.

Richmond, Va., Feb. 12, 1861.

Alas! poor Ferdinand and Mary! Before the wedding day, set for April 30, 1861, his State had seceded and Ferdinand, attempting to cross the line to claim his bride, was shot to death.

No one who has a love for the bright and attractive in color printing can fail to be attracted by the fine pictures used as front cover pages by *The American Boy;* and few publications intended for juvenile readers can boast of so fine a list of loyal boy readers. If you have a young friend whose good opinion you wish to gain and hold, just treat him with a year's subscription. He will appreciate it enthusiastically and thank you for your thoughtfulness. It is full of interesting and instructive stories and other matter, well illustrated, and finds an easy road to the heart of the American Boy. $1.00 per year; The Sprague Publishing Co., Detroit, Mich.

Good Americans.

Chairman Koskiatowsky, of the Congressional Committee on Immigration, rapped that body to order. "We will now hear those who desire to speak on the new bill for the restriction of immigration," he announced.

Whereupon Messrs. Amazuma, Hip Lung, O'Laughlin, MacDougal, D'Eauvre, Schwartzenfest, Spagaroni, Kumar Ghosh, and Navarrez made eloquent talks in favor of putting up the immigration bars, so as to preserve the purity of the great American race. Mr. John Jones spoke in favor of opening the doors to all, but he was roundly hissed as being un-American.

The bill was favorably reported.—*March Lippincott's.*

Boston's Winning Fight.

The city with the oldest and finest record as a fighter of tuberculosis is Boston, Massachusetts. The city government has been at work stamping out tuberculosis since 1850. The campaign has not been spasmodic or picturesque, just steady, regular, unceasing. The death-rate per ten thousand in Boston during the five years ending 1855 was 47. For the five years ending 1900, the death-rate per ten thousand was only 24—cut almost in two by education and the enforcement of health laws.

Up to 1903, the Boston campaign was handled almost entirely by the board of health and local physicians. In that year the Boston Association for the Control and Prevention of Tuberculosis, a private organization supported by voluntary contributions, was established, and has taken for its part a large amount of experimental work, carrying out plans which the municipal health department would have been glad to undertake had the city funds permitted. This association established the first day school in the country, a day camp and finally a night camp for tubercular patients. The final triumph in the fight was scored in 1905, when the city opened the Boston Consumptives' Hospital, a municipal organization in which is concentrated the work of controlling and preventing tuberculosis.—*From Woman's Home Companion.*

Dr. John P. Roemich, one of the oldest dentists in St. Louis, is battling for life while five physicians try to relieve a concussion of the brain, suffered when he fell from a Grand avenue car at Magnolia avenue Feb. 15. Dr. Roemich lives at 1108 Chouteau avenue, and is 70 years old. Little hope is held out for his recovery.

Exercise and Breathing.

"Limited breathing capacity is one of the most common physical ills," says Dr. Jean Williams in *Woman's Home Companion.* "Poor breathers are found not only among the sick of the earth, but also among the moderately well. All chronic invalids are poor breathers, and it is quite likely that they never would have been invalids if they had been good breathers.

"Now, here is the connection between good breathing and exercise. In order to be a good breather it is necessary to have sufficient lung capacity. Suitable exercise broadens and deepens the chest, gives freer capacity to the lungs and better fits them for their important task of supplying oxygen to the body and relieving it of the deadly carbonic acid.

"When in the fresh air, breathing deeply, we absorb enough oxygen to saturate the blood. If we are exercising briskly at the same time, we absorb more oxygen, and are, therefore, just so much better off."

The annual report of the board of registration in dentistry in Massachusetts, shows that the whole number of persons examined in the year was 263, of whom 125 passed and 138 were rejected. Of those examined, 224 had been trained at a dental college or university, and 39 had no such training. Of the 224, only 125 passed and received certificates Of the 39, only eight passed successfully. Six violations of law were reported. The offenders were all convicted.

The Superior Court of California recently awarded a judgment for $3,000 against a dentist. The suit had been bitterly fought in the courts for two months. The allegation of the patient was that the dentist, in extracting three teeth, had let one of the molars slip down into his lung.

For two years thereafter, according to the complaint, the patient was treated for tuberculosis until the real cause of his shattered health was revealed, when a paroxysm of coughing ejected the tooth from the lung.

Dr. L. H. Wirt, a well known young dentist of Muncie, Ind., has sailed for Bombay, India. Dr. Wirt will remain in India for three years in the practice of his profession. He goes to the Orient as the result of a call made by the American and English colonies for dentists. His last purchase here, before buying a ticket, was an American flag. Each dentist that goes to India is guaranteed a stipulated salary, together with traveling expenses to Bombay, on condition that a three-year contract is signed.

Silicate Cements

By Dr. C. M. Baldwin, D. D. S., Chicago, Ill.

Continued from Last Month

The great improvement over oxyphosphates other than translucency is that Ascher's Artificial Enamel has shown wonderful resistance to oral secretions. This does not mean in a few mouths or merely isolated fillings, but practically in all mouths when materials have been protected and manipulated according to recent teaching.

The terms, dry, new, second, recent, etc., referring to the present method in contrast to the first or original method should not convey the idea that it is really new and untried. The principles underlying the method, and most of the details have been used almost since the materials were introduced into this country, but only within the last year or two has the method been widely accepted as the correct manner of handling Ascher's Artificial Enamel.

TESTS OUT OF MOUTH

The final and only complete and satisfactory test of anything is when it most fully meets all of the requirements under the exact conditions of use for which it was made.

Other tests may prove both interesting and instructive but are not conclusive. Out of the mouth tests are usually made under conditions that may be more favorable or less favorable than the mouth conditions. They prove to be of little real value whenever the test lacks one or more of the essential features of the clinical work that makes them unreliable.

Experiments are profitable when they add to our knowledge of the filling material examined, or improved operative methods.

Some reports of experiments with silicate cements have been more or less misleading because results obtained were contrary to clinical evidence.

Clinical results are facts and not theories, which become valuable evidence in proportion as it is accurately examined and reported.

Ascher's Artificial Enamel fillings are found to be clean and unstained both on the surface and at their margins after years of service, even including mouths of tobacco users.

Tests of this material showing cleavage from margins of metal, wood, bone, etc., should not be accepted as corroborative evidence of leaky fillings in the mouth.

A test should include all conditions of mouthwork that might alter results, so far as they can be duplicated.

Mixing, packing, *finishing* and *exposure to moisture* (protected by usual oily or varnish coating) should be completed according to *time* allowance for average practical mouthwork, making some allowance due to lower temperature. Thereafter filling and body filled must be kept *moist continuously* as long as test lasts.

Teeth, bone or ivory are more suitable materials than metals in which to make tests, especially if it is to duplicate operative features, or study details at margins.

AN EASY TEST

Prepare duplicate cavities in a dry *tooth*, and in one *that has been kept moist since extraction.* Fill both cavities and finish fillings when set, using soapstone powder on disks and stones to avoid use of alcohol on fillings to remove vaseline. When perfectly polished thoroughly cover filling in moist tooth with vaseline and *keep tooth moist* as long as test lasts. The dry tooth and filling in it should be left dry and exposed to air.

One filling will show a decided cleavage from the margin within a very few hours, while the other should and can be made so that its margins will remain almost if not absolutely perfect for days, and sometimes for weeks. Is it necessary to state which tooth has the better filling, the dry or the moist?

The cleavage in the dry tooth is in direct contrast to both the moist test and results in the mouth.

The moist tests closely approximate mouth conditions, and results in both cases are practically identical, or at least compare quite favorably as long as moisture is maintained.

The adhevise quality of Ascher's Artificial Enamel has usually been considered as much inferior to oxyphosphates, but practical application in the mouth has shown it to possess wonderful power to hold porcelain and gold together. This should especially indicate the use of sticky material to *seal* margins.

When out of mouth tests fail to show as favorable results as are daily obtained under the additional difficulties of mouth work, it clearly indicates that the test did not include all conditions necessary to develop all of the best qualities of the material.

It is necessary to estimate how much

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX MAY, 1910 No. 5

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society

and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. BETHEL, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address	District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.	Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple	Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland	D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Kansas City	Dr. Martin Dewey, Argyle Bldg.	Louisville	Dr. H. B. Tileston, Equitable Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.	Memphis	Dr. D. M. Cattell.
Los Angeles	Dr. B. Frank Gray, Security Bldg.	Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.	N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.	Richmond	Dr. F. W. Stiff. 600 E. Grace St.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"	New York City	Dr. W. H. Sieberst, 1 W. 34th St.
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.		

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, in U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

ETHYL CHLORIDE NARCOSIS

By Maurice Green, D. D. S., New York, N. Y.

ITS FIELD IN DENTAL SURGERY FROM OBSERVATIONS IN OVER 3000 ANESTHESIAS.

SAFETY, rather than efficiency, is the first essential of the general anesthetic that the dental surgeon seeks. Nitrous oxid having been his mainstay so long, because it can be administered (on account of its almost absolute safety in the most reckless manner), it seems almost impossible to introduce him to any other anesthetic, even to one equally as safe, more desirable and efficacious, therefore my ten years' advocacy of ethyl chloride to replace nitrous oxid has not brought the results it deserves, in the field of dental surgery. I am glad, however, to note that the medical profession has of late taken more kindly to ethyl chloride and a great many hospitals and kindred institutions, as well as private practitioners and anesthetizing specialists, have entirely discarded nitrous oxid in favor of ethyl chloride, on account of its many advantages which I shall describe herein, comparing the two anesthetics as I go along.

Before continuing, I wish to impress the reader with the fact that I draw my conclusions from at least 3,000 personally conducted administrations and an investigation of over 15,000 others from various hospital and private records, in which the administrations were conducted in the manner I shall describe, and in *none* of them were any untoward symptoms manifested.

Ethyl chloride is a colorless liquid with an odor peculiar to most anesthetics, of a pleasant sweetish taste, highly explosive and as it is very volatile should never be administered near an open flame; this is somewhat of importance, as several accidents due to neglect on the part of the operator, in this direction, are on record. Its history, method of manufacture, etc., can be found in any text book on chemistry and need not be gone into here.

When properly administered, it is pleasant to inhale and patients do not, as a rule, struggle or resist its induction.

It is marketed in containers of glass or metal, containing from 30 to 60 c. c. with automatic closing device so that the desired quantity can be released and no waste occur. This is of positive advantage in itself, as each case can be given just the required amount, which is not so with anesthetics prepared in capsule form, as in such cases we sometimes run short and must adjust another capsule, or have more than we require and waste some. Besides, I object to placing all my anesthetic into the inhaler at once, thereby giving the patient too sudden a shock when applying the inhaler to the face. I find it safer and more agreeable to place the inhaler in position empty and gradually administer the anesthetic. The experienced operator can, no doubt, see the advantage of this.

The inhaler which I have used in all my administrations and which I advocate is best described by the diagramatic illustrations. (See Figs. 1 and 2.)

Method of administration is very simple: Place your patient in the required position (employing same technique as with nitrous oxid, regarding mouth prop, etc.) grasp the inhaler at its metal part, with the left hand same as you would a revolver, allowing your thumb to play freely so that it can cover and uncover the opening of the admission tube (c); put the rubber face-piece over the mouth and nose of the patient, then spray a small quantity of ethyl chloride into the admission tube and cover same with the ball of the thumb; allow the patient to take 5 or 6 inhalations and *repeat* this procedure as *often* as necessary until the breathing becomes stertorous or other symptoms of anesthesia manifest themselves, such as entire relaxation of the arms, which can be tested by lifting up and allowing to drop. At this stage your patient is sufficiently narcotized to give you *ample time* for any simple dental operation and even for a number of extractions. Should a longer (3 to 5 minute) anesthesia be desired, continue the induction until a deep stertorous breathing has ensued for 2 to 3 minutes. The advantages of this inhaler and method must appear plain to the reader; every time the operator removes his thumb from aperture c. to spray in the anesthetic, he admits air without detriment to the anesthesia and to the insurance of the safety of his patient: also, the anesthetic is sprayed directly into the bag and there volatilizes so that the patient breathes the vapors only and at no time is there any of the direct chill of the ethyl chloride in contact with the face or the organs of respiration; furthermore no gauze or cotton of any kind is required in this instrument, making it very simple and clean.

During the anesthesia circulation increases, cyanosis *never* presents, stimulation of the higher centers ensues, denoted by a perspiration on the forehead, and the deeper the anesthesia is carried the more the relaxation of the muscles.

I have no contra-indications to advise except as with nitrous oxid the air passages should be free of obstructions, mechanical or pathological.

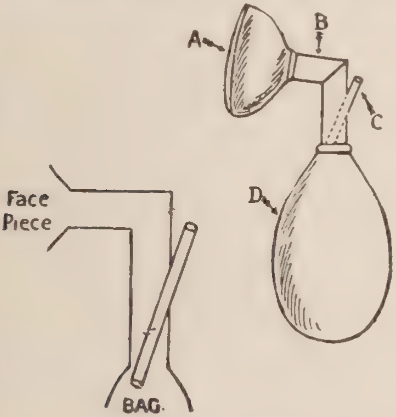


Fig. 1.

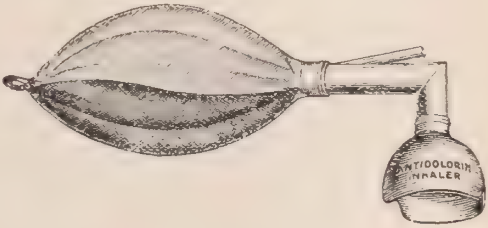


Fig. 2.

I have often been called by surgeons to administer this anesthetic where all others were contra-indicated and have so far fulfilled my claims as to its safety.

The absolute purity of your ethyl chloride is most essential and a tube having rather a heavier spray than the ordinary is advisable.

For a dental anesthesia 3 to 5 c. c. is the average minimum and maximum dose and this will give a longer and more profound anesthesia than 8 to 12 gallons nitrous oxid.

Children, like with all other anesthetics, are splendid subjects, neurotics and alcoholics are of course the most unruly subjects; with this class of patients, if an appointment can be made in advance, I give them codeine in proper dosage several hours before the anesthesia and then find very little trouble.

As a matter of comparison with nitrous oxid I find as follows:

The ethyl chloride inhaler is simpler, more portable, less expensive and cleaner.

Expense per administration is about 50% less.

There is no cyanosis, no muscular contraction, no swelling of the tongue to obstruct your view or interfere with your instruments.

The duration of an ethyl chloride narcosis is much longer, permitting you to operate with more deliberation.

Ethyl chloride is noiseless in its escape from the container.

The effect and after-effect on the patient is pleasant, the patient is absolutely anesthetized, neither seeing the operation or hearing what is going on, as is so often the case with nitrous oxide.

I must admit, however, that about 1% of the cases have a slight vomiting afterwards, which I attribute to the swallowing of blood due to relaxation of the deglutary muscles, this not occurring in nitrous oxid so often as the same muscles are contracted. The vomiting is brief, however, and of no severity.

I have administered ethyl chloride up to as long as one hour and fifteen minutes; the ages of my patients have varied from 18 months to old age; the operations have covered from a simple tooth extraction to those of reduction of fractures, mastoids, axillary, rectal, vaginal, removal of tonsils, adenoids, epules, lymphatic glands, etc. In none of the cases has the patient failed to regain consciousness 5 minutes or so after the discontinuation of administration and the disagreeable nausea, so common to major anesthetics, avoided.

I am sure if a uniform technique would be adopted, this anesthetic would find a much wider scope in dental surgery than it enjoys at present.

All the newer proprietary anesthetics now advocated for dental use, contain *at least 60% of ethyl chloride* and therein lies, not only their efficiency but their safety as well, then why use any combination when its *safest* ingredient will answer your purpose better, safer, and more economically?

I have put my observations before you plainly, as I have found them actually, clinically, not theoretically. I hope that some of my readers will give this anesthetic a fair intelligent trial, following the method I have described, and I am positive, with all things equal, they will come to the same conclusion that I have.

ANESTHETICS IN DENTISTRY *

By C. H. Taylor, D. D. S., Memphis Tenn.

THE QUESTION is often asked, has a dental surgeon the right to administer an anesthetic? My answer is most assuredly, *yes.*

By right of discovery and inheritance, because the greatest benefactor the human race has ever known, Horace Wells, the discoverer of surgical anesthesia, was a dentist. Morton, another dentist, was the first to discover the anesthetic properties of sulphuric ether; and it was Roland, the dean of the Dental school of Bordeaux, France, who experimented with various anesthetic mixtures and gave us the combination he designates Somnoform. Had the rank and file of the dental profession followed in the footsteps of Wells and Morton and made practical application of the truths these men gave us, dentistry would today be a century in advance of its present status. It is said of the Savior, "He came into His own and His own received Him not;" nevertheless, the despised, the rejected One became the light of the World.

---

*Read before the Memphis Dental Society, October, 1909.

So it has been with anesthetics. The world is indebted to the dental profession for the discovery of the anesthetic properties of Nitrous Oxid and Ether: these anesthetics, rejected by the dental surgeon, in the hands of the general surgeon have become the greatest boon ever bestowed on suffering humanity. As the Jews will surely return to Jerusalem, we should return to our own, claim it, appropriate, make use of it and reap the rewards. Surely, if any one is entitled to administer an anesthetic, it is the dentist; not only because of the priority of discovery, but because of the necessary pain inflicted to do his work properly. Has the dental surgeon the *legal* right to administer anesthetics? Certainly, if he has received proper instructions in the same from the college which conferred on him the degree of D. D. S. I regret to say, however, few schools have been teaching the branch as thoroughly as it should be taught, and when taught, comparatively few dentists avail themselves of the privilege conferred on them by their Alma Mater; whether his conscience tells him he is incompetent or for lack of moral courage, I do not know.

I do not mean to say that all dentists should give anesthetics but if a dentist is competent it is his privilege and I believe his duty when occasion demands. The schools are waking to the necessity of establishing special chairs on anesthesia and giving the student of dentistry a thorough course in anesthetics both theoretical and practical, and I predict the time is not far distant when anesthetics will be more universally given in the practice of dentistry. Why not? Haven't we, as a whole, as much intelligence in the rank and file of our profession as the medical profession possesses? Have we not many men in our own midst as well qualified to administer an anesthetic as the average physician in the rural district? Did you ever know of an M. D. continually refusing to administer an anesthetic? In this connection I would like to add that it is really surprising that the death rate is not very much higher when we stop to think of the many thousands of wholly incompetent physicians who are administering anesthetics every day.

It has often been said, and the understanding is quite general, that a dental surgeon has a right to administer only an anesthetic lasting one or two minutes for the extraction of teeth. I feel quite safe in saying that if the laws of our country allow a dental surgeon to administer an anesthetic, which places a patient in an unconscious condition, I do not think there could be any restrictions placed on the length of the anesthesia, whether it be from one to two minutes or one to two hours, according to the nature of the operation. Further, the fact has been established that the greatest danger from an anesthetic is during the induction period, and that most deaths occur at this period. From my recent reading on the subject I am thoroughly convinced that decidedly the largest per cent of deaths are due to carelessness and ignorance, rather than a contra-indication for an anesthetic.

My advice to every dental surgeon who means to administer an anesthetic is to read up on this subject, understand thoroughly the physiological effect of the agent used, then if he should be so unfortunate as to meet with an accident he will be able to appear in any court and establish the fact that he is well posted and competent to administer anesthetics. Being thus qualified is not only a safe guard from a *legal aspect,* but the self-confidence which a thorough knowledge of the subject gives is a very valuable asset in a successful administration.

The patient who contemplates taking an anesthetic is always more or less excited and nervous and if he discovers the operator is likewise nervous it only adds to his dread, and above all things, if you would be successful, get the confidence of your patient and as far as possible allay all fear. Many patients die as the *direct* result of fear, rather than the effect of an anesthetic. You cannot administer anesthetics successfully unless you have confidence both in yourself and the anesthetic and understand how to administer it. Elements of danger surrounding the administration of general anesthetics may be classified as follows:

First, ignorance, inexperience and carelessness on the part of anesthetist. Second, length of the anesthesia induced. Third, physical condition of the patient to be anesthetized. Fourth, shock. In civic matters ignorance of the law excuses no man. How important it is then that the anesthetist, who, for the time being, takes the life of the patient into his own keeping and is responsible for it, should surround himself with all the safeguards and knowledge pertaining to the subject. As to length of duration, other things being equal, a brief anesthesia is safer than a prolonged one.

The dental surgeon is fortunate in that most of his cases in which an anesthetic is called for will require but a brief duration of anesthesia. The time ranging possibly from one to five minutes, so that with intelligence and skill there is practically no danger. The physical condition of the patient requires a whole paper by itself and will be treated of at another time. Suffice to say, it's importance is great. Shock is responsible for more deaths than all other causes combined.

Different writers give different definitions of shock, but it may be defined as a condition of depression, produced by exhaustion of the medullary centers controlling respiration and circulation, by a too sudden, too frequent, too painful, too forcible or too prolonged stimulation of the afferent nerves. The essential phenomenon being a diminution of the blood pressure. The subject of shock is classified and dealt with accordingly, but we will only notice briefly the first, which is termed psychical—those who are affected by mental impressions. Fear is the etiological factor to be dealt with—fear or dread of the operation—or fear or dread of the anesthetic, if one is suggested. There are cases on record where patients died from shock as result of fear or dread of an operation where no operation was performed or anesthetic administered.

The relative safety of different anesthetics may be classified as follows: According to statistics compiled, Chloroform has decidedly the highest death rate. A. C. E. or C. E. mixture next. Ether, Ethyl Chloride, Nitrous Oxide, Somnoform, Nitrous Oxide and Oxygen. Different authors give different figures as to death rate of different anesthetics. There is not much satisfaction to a seeker of truth on the subject. Luke says, one death in 1,000 from Chloroform; one in 7,500 A. C. E. or C. E. mixture; one to 10,000 in Ether; one to 12,000 in Ethyl Chloride; one to 100,000 in Nitrous Oxide; Somnoform about the same, and so far none in Nitrous Oxide and Oxygen. If the latter estimate be true, no dentist need lay awake at night worrying over mortalities.

If an operator should administer Nitrous Oxide ten times a day including Sundays and holidays and took no vacations, he would be entitled to only one mortality in 274 years of practice. In 60 years' use, administered by all kinds and grades of careless operators, only thirty-five deaths are recorded against Nitrous Oxide, while there are no deaths at all recorded against Nitrous Oxide and Oxygen.

Now, having shown that most operations the dental surgeon is called on to perform can be done in a brief space of time, and while brief anesthesia is not synonymous with brief induction, it does imply brief elimination, and the quicker the elimination of a general anesthetic from the system, the speedier the return of all functions to the normal. If brief elimination is to be desired, brief induction is equally to be desired and in this we approach the *ideal* anesthetic for the dentist. All things considered, I think we have the ideal anesthetic in the combination of Nitrous Oxide and Oxygen.

I've had an experience of fifteen years or more with nitrous oxide with reasonable satisfaction. A little more than a year ago I discontinued its use because I found myself in a position where I had to give the anesthetic, care for my patient and do the operating -and I found it too great a tax on my nervous energies, so discontinued its use. For the past six months or more I've been more fortunately situated in the way of assistance and am giving Nitrous Oxide with Oxygen and the results are far more pleasing than Nitrous Oxide alone.

I have the latest improved apparatus holding two 100-gal. cylinders of Nitrous Oxide and one 40-gal. cylinder of Oxygen with a register showing at all times the exact per cent of oxygen being given and this must necessarily be varied according to the patient and conditions. While this combination gives beautiful results if properly administered, it is the most difficult, by *far*, of all anesthetics to administer and requires more skill and practice to get good results; however, where one is thoroughly familiar with nitrous oxide he will more quickly become proficient in administering the combination. The principal point which appeals to me in this combination over nitrous oxide is that the patient passes under its influence so much more quietly and the clonic muscular spasms, or jactitation which is so common under nitrous oxide is of *rare* occurrence.

With nitrous oxide the average period of available anesthesia is about thirty seconds, with nitrous oxide and oxygen, with use of nasal inhaler, you can operate as long as you wish. With nitrous oxide, when all air is excluded, the average inhalation period is fifty-six seconds; at the end of that time fresh oxygen must be admitted or permanent asphyxia may result, while with nitrous oxide and oxygen there is no asphyxia. All deaths from nitrous oxide are supposed to have been caused by asphyxia; no deaths have ever been reported from operations performed under nitrous oxide and oxygen.

Andrews, of Chicago, was first to administer oxygen with nitrous oxide as an anesthetic, but Hillischer, of Vienna, was the first dentist to systematically employ the mixture in definite proportions. He states he has administered "Schlafgas" to patients of all ages; to those suffering from advanced affections of the heart, to those with diseased lungs, epilepsy and other nervous diseases. He further states that he looks upon this gaseous mixture as *absolutely* without contra-indication. He also admits that there is more experience needed in administering this combination than any other anesthetic with which we are acquainted. Some very interesting experiments have been made with this combination. Dr. Martin, of Lyons, who was among the first to make practical application of nitrous oxide and oxygen reports that he kept a dog breathing a mixture of 85% nitrous oxide and 15% oxygen for three consecutive days, without any untoward effects during or after the insensibility.

A number of experiments are reported with different percents of oxygen added to nitrous oxide on lower animals as well as human subjects. Patients varied too widely to be able to settle on any definite per cent of oxygen, 15%, is too high except in very rare cases. In my own experience I find about 8% is an average and in many cases 4 or 5% is sufficient.

It might be interesting to describe the different types of patients which make it desirable to vary the per cent of oxygen, but as I fear this paper is growing too long I will only say that people enjoying robust health, strong and muscular, full-blooded and active, and all people who smoke, or drink to an excess, whether tea, coffee or liquor; drug fiends and those addicted to cigarettes or chewing tobacco are more difficult to anesthetize than the frail, the physically weak and those of tranquil temperament; the latter class admitting of a larger per cent of oxygen.

We will now pass to the preparation for administration. The old adage: "Any thing that is worth doing is worth doing well," forcibly applies in administering anesthetics in dentistry. The first step is to properly prepare the patient. It is preferable, though not absolutely essential, with the lighter anesthetics to present an empty stomach; where it is possible to control the patient by appointment, insist on at least a four-hour interval after eating, see that the clothing is loosened. If a female patient, don't take her word for it that her corset is not tight but insist that it must be removed or at least unfastened. Also, the neck band should be loosened. It is a good idea to know the bladder is not distended, especially with children. If you have a trained lady assistant she can see to the necessary preparation of women and children—and, by the way, a good lady assistant is invaluable in giving anesthetics. Stimulants are to be avoided, especially with men of strong muscular build, if you would avoid a rough house.

Have your forceps arranged in the order in which you will need them, but out of sight, mouth props, and it's not a bad idea to have a pair of tongue forceps handy as patients sometimes swallow their tongues. See that all valves about the apparatus are working perfectly, fill both the nitrous oxide and oxygen bags about 2-3 full. Place the patient in the chair. Now comes one of the most important steps—make every effort to dispel all fear or dread on the part of the patient, assuring them there is not the slightest risk in the anesthetic and that you will give no pain, and then make your word good. Your assistant can help you greatly in reassuring the patients by chatting with them and telling them the pleasant experiences related by other patients, etc.

The position is very important as it has a decided influence in modifying the phenomena of anesthesia. A perfectly comfortable and unrestrained position, the head should be allowed to retain its natural position in regard to the body, being neither flexed toward the chest or thrown back too far, as either position has a tendency to obstruct the air passages, and good results cannot be obtained. Everything else being in readiness, place a suitable mouth-prop in position, place hood over the face, valve open for first few inhalations, so the patient breathes nothing but the atmosphere, and in a low tone instruct them to breathe just a little deeper than normal and see that they are breathing properly before admitting the anesthetic, for as they start off they are likely to continue. This point settled, nod to your assistant to admit the anesthetic. The assistant already understands that as the patient begins to inhale the anesthetic the valves are to be opened gently between the cylinders and bags, keeping as nearly as possible an equal pressure in both bags, as unequal pressure in the bags would necessarily effect the per cent of oxygen and results would not be satisfactory.

Everything should be perfectly quiet as the sense of hearing is wonderfully magnified in a semi-conscious condition, and talking back and forth between operator and assistant often causes excitement on the part of the patient which brings about unsatisfactory results. Should relatives or friends express a desire to remain in operating-room they should not be permitted to stand near the chair or hold the patient's hand as it is most always a disturbing element. I much prefer not having them in the room.

If, however, the patient expresses a desire to have them present, and you cannot dissuade from it, have it understood with the relatives or friends that when you give them the nod they will retire and when you are through operating and before patient recovers you can call them in. By so doing you preclude the possibility of a disturbance and the patient is just as well satisfied.

As your patient inhales the mixture, watch the symptoms closely, calling for more or less oxygen, and by a series of signals indicate to your assistant whether you want more or less. As to the guides or indications of the anesthetic state, there are several but I depend more on the breathing than anything else, the latter to a man of much experience is a pretty accurate guide, and I listen very closely to the breathing and try not to change the position of my hands on the patient until I am pretty sure they are sufficiently anesthetized not to notice my movements. I also notice the reflex movements of the eye. As a final and certain indication of complete anesthesia I lift the hand and let it drop in the lap of the patient. If it drops with a thud, showing complete relaxation, I nod to my assistant to take the inhaler and I begin operating.

Never lose sight of the condition of the patient for a moment and if you find them recovering before you are through, by all means *stop* as it is fraught with some risk and always results in giving the patient an unfavorable opinion of the anesthetic and the operator. After you are through operating, allow patients to revive as quietly as possible, only watching them to see that they do not swallow or strangle on the blood, as this is a possible source of nausea, although in fifteen years of experience with nitrous oxide and the combination of nitrous oxide and oxygen I have never had but one case of vomiting.

I have not as yet had a patient to complain of any disagreeable after-effects from the combination of nitrous oxide and oxygen. However, one patient gave a hysterical cry but could not explain the reason for doing so. The majority of them relate voluntarily some pleasant experience, a pleasant journey or something of a similar nature. So much for an anesthetic that is absolutely safe and ideal for any minor operation.

> I HOPE I shall always possess firmness and virtue enough to maintain what I consider the most enviable of all titles, the character of an "Honest Man."
>
> —*Washington.*

ANESTHETICS FOR DENTAL SURGERY

By L. G. Noel, M. D., D. D. S., Nashville, Tenn.

DENTAL SURGERY embraces so many different operations, varying so widely in the time required for their performance and in the amount of shock to the nervous system, that it necessarily calls for various agents of different degrees of potency to meet its requirements.

For prolonged narcosis we have chloroform, ether, etyhl bromid and ethyl chlorid. The record of deaths in the dental chair from chloroform is so appalling that one would think no intelligent dental surgeon would permit this agent to be used in his office, even though a physician should recommend it and assume the responsibility by his presence and performance as anesthetist.

The April number of the *Dental Cosmos* records a case of death from chloroform narcosis in the dental chair, and I have almost quoted the editor's comment above. The May number of the *Dental Brief* reports two deaths from anesthetics in the dental chair, one from chloroform; in the other case, we are left to guess what agent was used, as the reporter seems to think this a thing of minor importance. A death from chloroform in Oklahoma is recorded in the DENTAL SUMMARY for May; thus it appears we are slow to profit by experience.

When serious surgery is to be done, and profound narcosis is required, the patient should be taken to a hospital where all proper precautions may be taken to meet the risk, and where the recumbent position may be maintained from start to finish.

In dental surgery too much recklessness has been displayed in hurrying patients through serious operations under profound anesthesia in the dental chair, and frequently without any preliminary examination of the patient to see what anesthetic should be chosen for the occasion.

If the dental surgeon feels his own incompetency to make this necessary examination of his patient, if he is not himself a physician, he should call in a medical man for the occasion; for under no circumstances should he administer profound narcotics alone and unassisted, or without the necessary preliminary examinations. I am led to indulge in this surgical platitude by seeing in a recent number of a dental journal a paper in which the author urges a more frequent and general use of anesthetics for such operations as extirpating pulps, lancing abscesses, and even excavating sensitive cavities. I can not condemn such recklessness in sufficiently strong language.

The oral surgeon will do well to content himself with such old and well-tried friends as nitrous oxid and sulphuric ether, on whose ancient and honorable record it will be good to fall back, if any trouble should arise; and of trouble he should always have a watchful fear.

---

*Read in the Section on Stomatology of the American Medical Association, 1909. Published in THE DENTAL SUMMARY by special arrangement with the Journal American Medical Association.

In making these remarks, I hope no one will get the idea that I would discourage research in the field of anesthesia—that I would frown on all effort to discover new and better agents; by no means. I wish my remarks along this line to apply to the average oral surgeon in the pursuit of practice, not to research work.

For prolonged anesthesia, such as is required in the surgery of the face and jaws, nitrous oxid has been found a valuable agent to produce narcosis, being succeeded by sulphuric ether to maintain this condition.

This has been called Clover's method, because Mr. Clover of England was probably the first to devise a suitable apparatus for these two agents.

Clover's apparatus has been subsequently altered; but it is questionable if these alterations have resulted in very decided improvement. The advantages of this method have been set forth by Dr. C. C. Norris, of Philadelphia, in a report of 150 cases, compared with 150 cases of plain etherization.

He first mentions the safety of nitrous oxid, which no one will dispute; then its successful use preliminary to ether at Guy's Hospital, London, for twelve years. Favorable report on the method in a considerable number of cases by Carter, Prevost and Kelly.

Dr. Norris, in enumerating the many advantages of this method over ether alone, lays particular stress on the speed with which narcosis is induced by nitrous oxid and the small amount of ether required to maintain it.

Narcosis being speedily and promptly induced by nitrous oxid, much time is saved, and the period of excitement, usually so hard to pass with ether alone, is avoided. There is an advantage of far greater magnitude than that of the mere saving of time and ether; it is in the lessening of the ether toxemia, for much less ether is required.

In a recent number of the *Therapeutic Gazette* we find an article on general anesthetics in which Dr. F. K. Bean is quoted as extolling this nitrous oxid and ether method.

A. Otte, discussing the incident of thrombosis and other complications after ether, insists on the importance of preliminary thorough disinfection of the mouth by inhalations of thymol and salicylic acid with alcohol and hot water; this is done on the preceding night and just before operation. Morphin, one-third of a grain, is given before the inhalation. The ether is then administered in small and measured doses; the patient is covered up in blankets and the antiseptic inhalations are resumed as soon as the operation is completed. This method, it is stated, materially lessens the after-dangers of etherization.

O. B. Wright has studied the postanesthetic pulmonary complications in the Johns Hopkins Hospital. He says that pneumonia induced by etherization is of a different type from the usual form, with lower and less regular temperature and without the appearance of a true "crisis." The pulmonary signs develop later, and there is less cough and sputum. The question of the pathogenesis of ether pneumonia is fully discussed under the heads of (1) irritant action of the anesthetic (and it is pointed out that ether is more commonly the exciting cause); (2) aspiration of mucus, blood vomitus and hypersecretion from the larger bronchi (it was stated that preanesthetic injections of atropin were found valueless as a means of checking the secretion); (3) emboli which Wright believes may prove to be a factor, but only one of many; (4) direct toxic effects of the anesthetic on the heart and blood vessels (these, it is believed, are more commonly met after chloroform inhalation); (5) the presence of pneumococci and other morbid bacilli in the air-passages; (6) extension of infection from the abdomen traveling through the diaphragmatic space; (7) the cooling of the surface of the body as a result of the anesthetic; (8) limitation of thoracic movement, leading to lessening of pulmonary ventilation due to bandaging, or to the voluntary efforts of the patient with the aim of avoiding pain caused by the thoracic excursion; (9) lessened resistance of the tissues arising from their depressed vitality. In discussing the prophylaxis, stress is laid on the strict limitation of the quantity of anesthetic inhaled and on attention to the posture of the patient.

The article cited above quotes A. E. Halstead as attributing post-operative paralysis to excessive dosage of ether. He uses morphin as a preliminary which diminishes the quantity of the anesthetic subsequently required.

For operations of short duration in oral surgery, such as extracting teeth, opening abscesses and removing pulps, nitrous oxid is the best and the safest anesthetic.

The S. S. White inhaler, devised for the administration of nitrous oxid alone or in combination with atmospheric air, is the inhaler I have used most; and I prefer it to any I have seen.

This instrument is so contrived that the operator may first accustom his patient to take deep inhalations of air; then, by a light pressure of the index-finger on a spring valve, a small amount of gas may be admitted, the amount of gas being gradually increased until the air is entirely cut off, and the patient is breathing gas alone. When duskiness of the skin under the eyes and about the lips begins to appear, or signs of distressed breathing, the pressure of the finger on this valve may be relaxed, the air is again admitted, and after relief is apparent the gas may be applied in full volume.

I used this admirable inhaler many times before I learned to control it. Although it is simple and easy to manipulate, I simply did not understand the best method of administering nitrous oxid a method that must have been well known to the designer of this inhaler in order to produce so perfect an instrument.

This inhaler is provided with an inflatable rim that fits close over the nose and mouth.

It is also provided with a spring valve that gives exit to the expired air, and it may be connected by large tubing with a gas bag which is connected by tubing to a cylinder of condensed gas, or it may be connected with a gasometer suspended over water, which latter is to be filled either by direct decomposition of ammonium nitrate or from a bottle of condensed gas. A transparent face-piece is now made which enables the anesthetist to note the color changes in the lips, a very great improvement.

There is a distinct advantage in being able to have your patient breathe pure air for some time through the inhaler before admitting gas. It quiets the fears of nervous patients and affords opportunity to instruct in deep breathing.

No anesthetic should, in the beginning, be pressed on the patient to the entire exclusion of air.

This is eminently true of nitrous oxid, which, if turned on in full force, gives the patient a smothering sensation that is alarming to many timid people, is a real danger-signal, and, if persisted in, quickly brings on a duskiness of the skin that deepens into cyanosis with jactitation, all of which symptoms may and should be avoided. The prop being in place, the patient started breathing calmly and deeply, the operator by a slight pressure of the index-finger admits a small amount of gas, at first so little that the patient does not know when he begins to breathe the anesthetic; more and more is admitted until the spring is well down and the patient is breathing gas alone.

The operator must watch the skin under the eyes and about the mouth for the slightest sign of duskiness and when these are noted instantly lift the finger from the valve admitting a full inspiration of pure air to chase away the cloud of cyanosis, when the gas may again be admitted and soon be pressed to full volume.

With some patients these tactics must be repeated once or twice before the anesthetic may be pressed to deep narcosis.

This is the whole secret of safety in nitrous oxid anesthesia, and if this method is watchfully adhered to many patients whose physical condition would contra-indicate gas may be successfully anesthetized.

In some patients of full habit, it is best not to wait for signs of cyanosis, but after a few deep inspirations of pure gas admit air and alternate until the gas may be pressed to full narcosis.

When the anesthetic is given in this way few patients will show signs of asphyxiation, and nitrous oxid is the safest of anesthetics. Combining nitrous oxid and air in this way, we get a more prolonged narcosis. There is no cyanosis, no jactitation, the patient is quiet, still, has no illusions, does not struggle, and thus the operator has a better opportunity; besides, the recovery is better. To my mind the advantages over nitrous oxid and oxygen are many.

Besides the increased safety, the apparatus is more simple, requiring no assistant to the anesthetist. The expense is far less and after-effects better.

I quote from a recent book on anesthesia as follows:

> Paul Bert's experiments with nitrous oxid and air were failures, because he attempted to employ only fixed proportions.
>
> Mr. Tom Bird claims to have used air with gas as early as between 1870 and 1880.
>
> Mr. Rowell has spoken well of the plan of intermittent admissions of air.

Mr. Carter Braine devised a face-piece intended to supply a ready means of admitting a varying proportion of air. Speaking of this intermittent air supply method, Buxton concludes as follows:

> The time occupied in producing anesthesia may be a minute and a half, or two; or even three minutes, and the period of anesthesia is usually longer than when only nitrous oxid is employed.
>
> I have obtained a workable seventy seconds' [anesthesia] by this method.

No mention of any unpleasant after-effects following this method are made by Mr. Braine, but in regard to nitrous oxid and oxygen I quote the following:

> After-effects, such as languor, nausea, vomiting, headache, slight vertigo following the use of nitrous oxid diluted with oxygen are somewhat more frequent that when nitrous oxid is used alone.
>
> This is probably due in part to or entirely to the more prolonged period of induction of anesthesia. The patients are longer in recovering their wits and occasionally remain in a dazed state for some minutes. The after-effects following the use of nitrous oxid and air are practically those already described in speaking of nitrous oxid .... conspicuous by their absence.

GENERAL ANESTHESIA.*

By F. R. Mc Clanahan, D. D. S., Rushville, Ind.

WHEN we stop long enough to consider the exquisite torture we daily give our patients, the wonder is we do not stop oftener and think harder how we may alleviate a great part, at least, of the pain we produce.

It is not I feel that our own profession has taken a position unworthy an educated body; rather, on the contrary, I feel proud of our work in the past half century or more, in the bringing out and perfecting of appliances, methods, new chemicals and their various combinations for the relief of pain. But it is still true that we have much to learn concerning the best and safest methods of producing anesthesia.

The question is as old as man himself—not an age in the history of the human race but that more or less gray matter has been expended on the still virile topic: How Can Man Make Himself Immune to Pain, and at the Same Time Preserve the Bodily Functions Without Injury or Change? and before closing this paper I want briefly to suggest a scheme that I believe will be productive of results.

As evidence of the antiquity of anesthesia, witness this verse from Genesis II-21, "And the Lord God caused a deep sleep to fall upon Adam, and he slept; and He took one of his ribs and closed up the flesh instead thereof."

---

*Read before the Indiana State Dental Society, 1909.

It perhaps is not material to this discussion whether or not you believe in this first recorded surgical operation, but you will agree that the suggestion, this "deep sleep" that took possession of Adam, is what man has ever since been trying to work out; I believe man has been a thinker from his earliest existence, and primitive man, without doubt, tried many ways, both mechanical and with various decoctions, to ease his sufferings; but these efforts were very crude. And yet with all our boasted learning of today, can we not look back just a few years and see how far from an orderly plan much of our work has been?

Mechanical anesthesia was very early practiced, and even today in some countries digital compression of the carotid artery, "the artery of sleep," is employed. In later years the juices of Indian hemp and the poppy were used before a surgical operation. In the fourth book of the "Odyssey," Helen is supposed to have given to Ulysses and his comrades the "sorrow easing drug," composed of the juice of the poppy and Indian hemp. "The earliest reference to anesthesia by inhalation is contained in the works of Herodotus, who states that the Scythians were accustomed to produce intoxication by inhaling the vapor of a certain kind of hemp, which they threw upon the fire or upon stones heated for the purpose. This was probably Cannabisindica or Indian hemp."

The early Egyptians employed Mandragora as a medicinal agent, both as an anodyne and an anesthetic and there is no medicinal plant around which clusters more mysterious and quaint associations than this one. The Babylonians and ancient Hebrews used this plant more than 2,000 years B. C. for its many virtues.

Pliny states that a tincture of this drug, Mandragora, is taken before surgical operations and that the patient is thrown into a deep sleep and does not feel pain. You will observe that the "deep sleep" is still spoken of. And so on down in the sixteenth century we have the following recipe for making an anesthetic: "Take of opium, Mandragora bark and henbane root, equal parts, pound them together, mix with water. When you want to sew or cut a man, dip a rag in this and put it to his forehead and nostrils. He will soon sleep so deeply that you may do what you will. To wake him up dip the rag in strong vinegar. The same is excellent in brain fever, when the patient cannot sleep; for if he cannot sleep he will die."

A study of anesthesia from the early ages up to the time of Priestly, in 1767, develops this truth that very little scientific work had been done in this period; at least the investigations of the best thinkers had not resulted in any very great advancement, and as before stated, the three plants, Mandragora, Indian hemp and the poppy were the principal anesthetic agents.

Priestly's discoveries of the method of liberating and collecting gases led to the establishment of an institution for further research and study at Bristol, England, in 1798, and Sir Humphry Davy was appointed superintendent. He suggested that nitrous oxide could be used to advantage in minor surgical operations. Sulphuric ether was also used about this period. However, the great value of these agents as general anesthetics was neither fully understood nor used except for experimental or amusement purposes.

The method of giving ether was not unlike the best methods of today. "Two drachms of pure ether were poured into a bladder and allowed to diffuse. This mixture of air and ether vapor was inhaled and the expirations allowed to enter the bladder." Now called the closed method.

Another and radically different method of producing general anesthesia was practiced from the early ages, and about this period received much recognition through the work of Mesmer and others. I mention this at this juncture because I believe the power of mind over the material is destined to play an important role in future general anesthesia, and further, that mesmerism combined with inhalation of ether led up to the use of general anesthesia by inhalation alone. That is, that the principle or so-called mesmeric influence, was identical in action with that of narcotic vapors and as many operations had been performed painlessly under mind influence, the same could also be accomplished under the inhalation of narcotic vapors.

Chloroform, perhaps the most powerful and easily the most dangerous anesthetic agent so far discovered, was spoken of in 1832 as having a delicious flavor and with intoxicating qualities equal to or superior to those of alcohol. These qualities were instrumental in finally placing it in the front ranks as a general anesthetic.

If there be one thing above all things that a man tries to do, it is to make something, and to have something he can point to and say, "See, were it not for me this thing had never been." The thing that gives one man pre-eminence above his fellows is this making power. It is because he can create and they can only alter. It is because things grow in his mind from the seed and theirs are only sand gardens where children stick up rootless flowers and pretend they grew there.

The history of anesthesia from 1835 to 1850 is one of "See, were it not for me this thing had never been." Now, this creative power in man is God given and one of the noblest in his being, but when envy and strife and conceit go with it, he fails to reach the heights where stars do shine.

Man must grow in the direction of humanity, and all that he knows and loves must go out with him into all his life; this cannot be said of all men who helped to usher in the new science, anesthesia. One is inclined to pity Dr. Wells as he goes from place to place seeking recognition as the one who gave to nitrous oxide its practical utility (in 1844), and especially so when his mind is affected by his failures.

So with Morton and Jackson and Collier who were, with many others, instrumental in introducing ether for surgical operations in 1848. Morton died bankrupt and broken-hearted. Jackson spent his last days in an insane asylum. The dream of the scholar, the scientist, the philosopher his own future is like unto the one we have read about the rose.

We can well believe while the rose is but a bud, shut in between hard, glossy green leaves gathering only the first dream of color into its pale petals, that its own color should seem to it the purpose of its life; just to be the perfect rose for the pure beauty of its perfectness. But when the bud bursts and the rose is born—what then? A world is waiting for its fragrance and its loveliness. To serve that world, to send the colorless light interpreted through its soft hues, and the odorless atmosphere translated by its fragrance, to be all that it may *be* for the sake of all that it may do, this is the larger purpose of its being, and learning this, it ripens to the perfect flower.

So may the scientist dream of a self-centered life, but when he has given to the world something good and useful, the world has been waiting for it and appropriates it at once; and to serve the world, "to be all that he may be, for the sake of all he may do," should be his larger purpose in life. And so with this illustration, this lesson, we leave the history of anesthesia and will try to find out by separately studying each anesthetic what special favor it may possess, what advantages one may have over another as demonstrated in actual clinical research.

Before proceeding further with the discussion of the subject under consideration let me add this one word. Never give a general anesthetic for a simple operation that can easily be done under a local anesthetic. I am quite sure that many times we place the lives of our patients in jeopardy without due cause. A local anesthetic, carefully and cleanly administered, is rarely dangerous to life, and very many, even quite extensive, operations may be and are performed most satisfactorily in this manner. Now, after having decided that a general anesthetic is necessary for the case in hand, the preparation of the patient and choice of narcotic must have careful consideration.

Admitting, as many good surgeons do, that many of the post-operative lung complications arise from the inspiration of infected material from the mouth, how necessary, then, to have the oral cavity thoroughly disinfected before administering the anesthetic. It is to be admitted that emergency cases arise when this preliminary work cannot be so carefully done, but cases are extremely uncommon wherein a dental surgeon need neglect this work. Along with this preliminary work is the thorough examination of the patient to determine the safest anesthetic to administer.

I believe it is a mistake for any surgeon to use the same agent for all cases, and yet this procedure has the advantage of great familiarity with the chosen drug. As Dr. Joseph C. Bloodgood has said, "The safest anesthesia seems now to depend upon three factors: (1), the choice of the anesthetic best adapted for the individual to be operated upon and for the character of the operation to be performed; (2), the best method and technique for producing anesthesia, with the anesthetic chosen for the particular individual and operation, and (3), a skillful anesthetist.

In very many cases the life of the patient depends upon the proper choice of the anesthetic and the technique of its administration. Students of anesthesia are agreed that nitrous oxid is the safest general anesthetic known and that for short operations it is the agent of choice.

It is produced from ammonium nitrate in larger quantities and more easily, I believe, than from any other substance, and if we manufacture our own gas, great care should be exercised that the salt be pure; but as nitrous oxid is now so conveniently supplied by the manufacturer and of such excellent quality, the surgeon can neither afford to run the risk of making impure gas nor waste his time in its manufacture.

Nitrous oxid has this advantage over other narcotics in that its constituent elements are the same as the air we breathe; but they differ in the proportion of their elements, and also in the manner of their association. The elements, nitrogen and oxygen, are mechanically associated in the air, whereas in gas these elements are chemically combined. But it still resembles the air and is inhaled by many patients with very little or no discomfort.

To enter into a discussion of the physiological action of nitrous oxid, together with the blood changes under the same, is more than the scope of this paper. Suffice it to say that very thorough investigations are now being made in this direction and that so far they are quite favorable to a more extended use of this agent. Dr. H. C. Wood writes that, "Notwithstanding all the evidence which has been given, there is much reason for believing that nitrous oxid has anesthetic properties, and that although the unconsciousness which is produced when pure nitrous oxid is inhaled is largely the outcome of deprivation of oxygen, yet the drug is capable of producing narcosis by its own inherent properties; and of all the anesthetics, it is the safest." Thus far there have been but four recorded deaths which could with certainty be attributed to the drug. Now with all its good qualities it would seem to be the agent of choice for operations lasting from, say one to ten minutes, or even longer. It has been given continuously for two hours and forty minutes in combination with oxygen with very good results. It may be used for all, or many of the dental operations needing a general anesthetic; also in such operations as the opening of felons, the breaking up of adhesions in joints, the reduction of fractures and dislocations, the removal of tumors and even very many more extended operations.

With all its good qualities it has some disadvantages and contra-indications as reported by the Anesthesia Commission of the American Medical Association. It is not suited for fat, plethoric and alcoholic patients. The requisite skill for its successful administration, the required quantity of gas, and the proper apparatus cannot always be secured, and the cost is not inconsiderable. It should not be employed for patients with dilated hearts or for those with extremely bad hearts, whether with valvular or myocardial disease.

It should not be used in cases of narrow or abnormal air passages of enlarged lymph nodes, goiters or enlarged tonsils and adenoids.

Some one has said that "The teachings of etherization come from experience, and he who has studied these in their diverse phases the most faithfully is he who will most safely, because most wisely, employ it."

To the one who has not had a wide personal experience in the giving of anesthetics, the literature, which is most voluminous, is anything but satisfying. To illustrate: Two men of equal prominence and ability will take absolutely opposite views in a given case. One will favor ether narcosis, the other chloroform, or may be spinal anesthesia. I think a partial explanation of these divergent views may be found in my quotation above, that from the long and continued use of one agent the anesthetist becomes acquainted with every phase of the drug on different individuals and is quick to detect any untoward results.

I believe the time is coming when the man of ordinary ability will not be permitted to administer either ether or chloroform, or perhaps we may go further and include all general anesthetics. Dr. Bloodgood says that "Accumulated experience and reading on this subject impress me more and more that anesthesia is an art in every sense of the word. Specially trained anesthetists are necessary for safety." But until such time as we can have specialists, what are the best methods of producing ether narcosis?

A method that deserves special mention is the "Interrupted ether narcosis." This, while not new, is evidently of great value in many cases. We must always remember that a general narcotic is a toxic substance which produces intoxication, and carried too far, serious results. Before beginning the interrupted narcosis, clinical observation has demonstrated that a hypodermic injection of morphine, say one-sixth of a grain, to be given one hour previous to operating. In long operations, where the anesthetist is apprehensive of trouble, it seems the method of choice as so much less of the drug is given. Also in operations on the face, mouth, head or throat where there is danger of blood entering the air passages. Such an operation is necessarily interrupted, of course, in the proper care of the patient, and yet results would justify the procedure.

Before beginning the operation the patient is anesthetized beyond the reflexes so that there be no shock in the initial work; but afterward the reflexes are always present—that is, the patient is carried just beyond the border of sensibility to pain.

As before stated, many surgeons are opposed to this method, claiming that the shock in such operations is greater and does more injury than the necessary amount of the drug to produce complete narcosis. The literature, so far as I have been able to study it, is on the side of using as little of the agent as possible to produce insensibility to pain. Of course, the anesthetist when trained for this work will know, by the nature of the operation and the study of his patient, when partial or deeper narcosis is indicated.

There are several methods of administering ether, and so far as I have been able to observe, all of them open to some objections or disadvantages.

Alice Magaw reports in the New York and Philadelphia Medical Journal 11,000 general narcosis without a death, and advocates the drop method on the open mask. This is a remarkably good record, and I believe no small part of her success is due to preliminary mental treatment. There is not the shadow of a doubt that the mental condition of our patients will have much to do with our success as an anesthetist.

There is a subtle power, a psychic influence that every one should possess who administers anesthetics. Before and in the beginning of narcosis, this quiet, gentle, soothing, inspiring force has saved many a patient from shock and even death itself.

In the open method it is recommended that if the patient be alcoholic a few drops of chloroform be given to shorten the stage of excitation, also morphine may be given before the administration if the history of the case is unsatisfactory. The closed method is not unlike the one described in the historical sketch. The cone or bladder fits the mouth closely and permits of rebreathing, which gives a quicker narcosis with a much smaller quantity of ether, but the toxic effect is greater.

Still another method, the mechanical, in which the drug is under perfect control, and it would seem this method has promise of great results; but I am giving too much space to this one agent. A method of using both nitrous oxid and ether has the indorsement of very able men, and clinical results are very promising. Nitrous oxid is used for the preliminary anesthesia, followed by ether to produce complete narcosis.

In looking up the literature on this phase of the question, I find a paper by Goldman, read before the New York County Medical Society, in which he states that it shortens the period necessary to produce complete narcosis and lessens many of the discomforts. Brown and Kelly, of Baltimore, report that the method seemed to possess so many advantages to the patient, operator and anesthetist, and so few disadvantages to any of these, that it has become an indispensable part of their operative technique. Bennett and Carter, of New York, advocate the method with special apparatus. Hewitt, of the London Hospital, considers the method as one of very great importance. So it would seem this mixed narcosis is destined to become one of general use for reasons stated.

And now what shall we say of chloroform? Permit me to give you a bit of personal experience with this drug. While yet a student, I was called to the home of a physician to extract a tooth for a member of his family. I was informed immediately I arrived, that I was expected to administer chloroform: Sure I would do so. I formed a cone of paper and a napkin combined, sprinkled it liberally with the drug, set my patient bolt upright in an ordinary chair, placed the cone near her face and said to her to breathe freely and rest assured that she would not suffer any pain: After a very few inhalations I removed the mask and extracted a very bad lower molar. My patient awoke in a few seconds and expressed herself as *delighted.* Elated with my success I continued to use this method whenever the seriousness of the operation seemed to demand it, and with uniformly good results. It occurred to me one day that I ought to study the nature and modus operandi of this drug more carefully in case of accident of any kind in its use: and here is where I made a mistake; " 'tis folly to be wise." I think I might have still been giving chloroform had I not been led by my study to learn something of its nature and especially of its dangers as a narcotic agent. Now, these cases were not hypnotic and yet akin to it; rather, I should say, suggestion aided by the vapor of a powerful anesthetic.

To quote again from the Anesthesia Commission, "Chloroform is taken up mainly by the red blood corpuscles and forms unstable and dissociable compounds with the protoplasm of the blood and tissues. It is a cardiac depressent acting on the inhibitory mechanism of the heart and producing syncope from dilation of the capilaries through the vasomotor system," and "The prolonged action of chloroform-laden blood results in the paralysis of the respiratory center." And now to be very brief—if chloroform is the agent of choice, the special preparation of the patient will be practically the same as for ether. See that the patient has plenty of air and give the chloroform by the open method; that is, on the ordinary mask, but see to it that you proceed slowly, drop by drop, until narcosis is completed with a small amount of the drug.

To push the anesthetic when the patient is struggling and with irregular breathing is dangerous in that a sudden deep inspiration may carry too much of the vapor into the lungs causing paralysis of the heart by this chloroform blood in the arteries. To the obstetrician as well as his patient, chloroform has proven itself a great boon. Were it never used for other than these cases alone, it were a blessing of the first magnitude. Very careful studies by men of unprejudiced minds show that "The sum of its advantages far outnumbers its dangers." Truth is, statistics show that in obstetrical work it is the safest analgesic known.

The physiological basis of obstetrical analgesia, or anesthesia, is the fact that the action of anesthetics is regularly progressive. The intellectual processes are early disturbed, then comes loss of perception of external impressions as of touch, and the special senses, then entire loss of consciousness, while sensibility to internal impressions remain, and the reflex actions arising from these are only abolished later; with this partial or interrupted chloroform narcosis, the nerve centers that control the muscles in labor are not paralyzed, but continue to act with as much vigor as though the drug had not been used and possibly better, as the natural tendency of the patient would be to inhibit this action on account of the intense pain so produced. Needless to say, perhaps, that this partial or obstetrical anesthesia requires skill and constant attention as in other cases the anesthetist must be able to see when less or greater quantities of the drug are necessary.

Again, prmit me to say, let suggestion, confidence, kindness, gentleness of action take the place of that extra quantity of the anesthetic and so will your success be the greater.

To treat of each anesthetic now in use, giving its history, its physiological action, its advantages and disadvantages, also indications when not to use each, requires more time than I can give or than you care to listen, and I shall hope that the discussion will give prominence to such other drugs as deserve a place in the curriculum of anesthetics; such as ethyl chloride and ethyl bromide, scopolamine—morphine narcosis, etc.

I am informed by one of the leading surgeons of the state that this latter, scopolamine and morphine, produces a splendid surgical narcosis when aided by a few drops of chloroform; and yet it is considered dangerous and must be used only by men thoroughly skilled in the use of drugs.

In reviewing the whole subject of anesthesia we are forced to these conclusions; given a pure drug, and a trained and skillful anesthetist who is always prepared for all emergencies, there is relatively little danger to life in general anesthesia. On the other hand, an impure drug, a careless, untrained person to give it, and life is always in danger.

What psychologists call time reaction, that is, the period which it takes for the muscles to carry out the order of the mind, is greater in some than others. The man who would be a success as an anesthetist or surgeon in the superlative degree must be one who gives careful attention to his own physical body. The time reaction of the drinker is not as good as the abstainer. The time reaction of the man who is a careless eater is not as good as the one who makes eating a science. If the lives of your friends and mine must be placed in the hands of anesthetists and surgeons, may we not demand of them that their every faculty be polished until it shines as burnished gold. There are some cases in which the element of time, though a fraction of a second, may save a life. Men who are dealing with human life must have minds clear as crystal, strong as steel, yet shades of thought as soft as shadows; at times a firm, resolute touch, and again as soft as the velvet touch of angel fingers.

Now, just a brief word with reference to the scheme for securing the ideal anesthetic. Long, careful, scholarly work will be necessary. Very few men are so situated in life that they can give all their time to the study of problems of this character. Why not let the government at Washington endow a school of research where men of splendid ability may make this a life study? The government does this much for the cattle in your fields; why not for the loved ones in your home?

DISCUSSION

Dr. C. C. Miller, Plainfield, Ind.: The essayist has certainly given us a very interesting and instructive paper. His experience, investigation and research on the subject of "General Anesthesia" has been very complete and thorough-going. I very heartily agree with him that experience and familiarity with any particular anesthetic means much toward its successful use. In fact, I almost think like the old physician who told his assistant and student that only four drugs were required to practice medicine successfully, if he but understood those four well enough.

We will find one anesthetist who rarely uses anything but ether and another of equal ability, who almost confines himself to chloroform. And I believe that either one is best in the hands of him who knows best how to use it.

I find nothing in this paper with which I wish to disagree. The essayist has given us a beautiful illustration of the evolution of methods and processes as we find them in this noble profession of ours. As the rose unfolds its petals to the sun, so have we had brilliant unfoldings from the vulcanite denture to that American Beauty which Dr. Taggart has recently given us when he perfected the casting of gold inlays.

I am not sufficiently familiar with chloroform or ether to attempt to discuss their relative merits and demerits, of which I have no doubt, the both have many.

But I do wish to speak of a flower, which to me has much beauty and fragrance, too. I refer to that elegant LaFrance Rose, which has been given by the distinguished artist, Dr. Rolland, when he presented to the world his Somnoform.

I am able to get very much more satisfactory results with Somnoform than I have ever gotten with Nitrous Oxid. There are cases when, by a continued administration of Nitrous Oxid, such work as removing a vital pulp or preparng a sensitive cavity, might be done as it could not be done with Somnoform with the ordinary inhaler.

I have, however, administered somnoform for five to fifteen minutes for minor surgical operations where the work did not interfere with its continuous administration, and with perfectly good results. I also have given Somnoform preparatory to chloroform anesthesia and I believe it has much merit when used in this way, as a profound chloroform narcosis, can be accomplished so much quicker and with less fighting of the drug.

I have very little use for a general anesthetic except for extracting, and for this class of work I like Somnoform better than Nitrous Oxid, for the following reasons:

1st. Produces less nausea.

2nd. The period of induction is shorter.

3rd. The duration is longer.

4th. It is more easily handled, being put up in 60 gram vials and 3 and 5 tubes instead of 100-gallon cylinders.

5th. The last and least reason is that it is less expensive than Nitrous Oxid.

Somnoform produces a more natural sleep, I think, than any other anesthetic I have ever used, and instead of the smothering sensation common to most anesthetics I find that it has a soothing taste and when the lungs are once filled with the gas, the patient is soon passing over into slumberland. I have several times administered pure ethyl chlorid which can be given with the Somnoform inhaler, but it does not seem to have that soothing, quieting effect produced by Somnoform, although I believe I like it better than Nitrous Oxid.

I believe that all who administer general anesthetics, no matter what the drug employed, will find patients who are not in proper mental relation with him; patients whose confidence he cannot completely control. In such cases we may expect difficulty, just to the degree that we fail in establishing that proper psychological relation. I have more than once refused to administer a general anesthetic for this reason alone.

I shall not attempt to discuss the "Interrupted Ether Narcosis," but with Nitrous Oxid, Somnoform or Ethyl Chlorid I believe it better to carry the patient to a state of complete narcosis. For, although the work may be done without pain, and the patient may be in a state of muscular inactivity, under the anesthetic, it seems to produce a great deal of fright and some shock to the patient, while one more good breath of the drug would often put the patient over the line and he would wake up with no unpleasant recollections of the work.

We have a few deaths recorded to the credit of Somnoform, but when we stop to consider how many dentists are using it and how little special training most of us have had before taking up its use, I am led to believe that if it had always been used by a skilled anesthetist there would be fewer fatalities accredited to it.

I agree with the essayist that we are not justified in administering a general anesthetic for trivial operations, and I will say that I do not give Somnoform as much as I used to because I believe we have at our command better local anesthetics than we had a few years ago.

In closing, I wish to thank Dr. McClanahan for his excellent paper.

R. R. Gillis, Hammond, Ind.: I saw something the other day that impressed me as being a good point and I want to give it here. Very often in the giving of the anesthetic the operator will instruct the patient to breathe deeply, and of course the patient will make an effort to draw in all the air he can. Sometimes after four or five inhalations they stop, then of course you have to work to get it out again. This operator said, ''Blow it out.'' He worked just exactly the opposite. His idea was a good one. If the patient will exhale all the air, he will get more in on that account and will be more likely to keep on going.

J. M. Singler, Dunkirk, Ind.: I have listened with interest to the doctor's paper and desire to relate you an experience. About ten days ago, Miss B., a young lady about 18 years of age, accompanied by an elderly lady, came to my office. Miss B. desired to take an anesthetic for the removal of a tooth. I ascertained that she was prepared to take an anesthetic. She thought it would be necessary to take chloroform or ether, so after preparing her I examined her carefully in every way. Pulse normal, respiration perfect, altogether she seemed an ideal patient for an anesthetic. I decided to administer Somnoform, so I placed the cork in position, told her to take five or six deep breaths, which has been customary with me with all my patients. She breathed freely and I thought she was in perfect condition to receive the anesthetic. I applied the face mask, then I told her to do what the doctor said we should not do, breathe deeply. She took two breaths nicely, except toward the last she appeared to strangle slightly; I raised the mask for a moment to give her air, then I replaced it; she took the third deep inhalation, started on the fourth and tried to slip away from me. I forced her back into the chair gently but firmly, holding the mask in position, and she collapsed. I shook her gently and said ''breathe deeply.'' She sank lower and a pallor came over her face which alarmed me. I dropped the mask, took her pulse, saw it was getting weak, fluttered a moment, and I lost it—could not hear her heart. Respiration ceased entirely. I placed the patient on the floor and sent the other lady to call the doctor immediately. I was applying artificial respiration at this time in a vigorous manner, but she kept growing greyer and more blue. In the meantime I had given her spirits of ammonia, applied wet towels, filled her mouth with whiskey and left her for an instant to call the doctor. Between the doctor and myself, in half an hour she recovered her normal condition and stated she had felt no ill effects and wondered if the tooth was out. She had taken only three inhalations of the Somnoform, the fourth was forced, as I retained the face mask in position until the period of hysteria should pass. This I had done many times before and the result was all that I wished for. I have not administered it since. It is possible I do not understand it at all, although I had administered it sixty-three times and never had an experience like this. I am glad to have heard this paper and will be pleased to hear from any one else.

Dr. C. C. Miller, Plainfield, Ind.: I want to answer the doctor as best I can regarding the condition which he has just described. I have had a few cases where patients exhibited symptoms similar to these, and I attribute the trouble to a failure in establishing the proper mental relation between myself and the patient. There are no doubt patients who will show an idiosyncrasy against Somnoform, but I believe they are few. I have had patients to whom I would start to administer Somnoform and they would become hysterical in a way and did not show evidence of the proper confidence in me. In these cases I simply put the mask aside and use some other plan of overcoming the pain.

I had one case in which I gave a lady Somnoform—she took it nicely, the sleep seemed natural, I did the extracting and the patient was apparently coming back to consciousness alright, but just as she was about to come to, she collapsed in a faint. There was nothing particularly serious about it to me only that she was not taking any air into her lungs, which was the very thing she needed. Her lungs were full of Somnoform and the physical conditions were very much as the doctor described in this young lady. I called a physician and gave her artificial respiration vigorously and when the physician came the patient was coming out all right. I may be mistaken about it, but I attribute the difficulty which the doctor mentioned to a failure in establishing the correct psychological relation between the anesthetist and patient.

DR. MCCLANAHAN (Closing): In looking over the literature, so far as I could, in regard to Ethyl Bromid and Ethyl Chlorid, I find them to be more dangerous drugs than Nitrous Oxid. It may be that the anesthetist has not been what he should be, for, as stated in the paper, no one should give an anesthetic who is not perfectly familiar with every detail of the procedure and the drug he is using. Nitrous Oxid, combined with oxygen, has been given continuously to a dog for three days, at the end of which time he was able to walk very soon after withdrawing the narcotic, and ate his dinner as heartily as usual. Therefore, I believe, after a quite thorough investigation of statistics, that gas, especially when combined with oxygen, is the safest general anesthetic we have.

In the gas-ether narcosis we have a special mechanical device by which these two can be given together. The gas should be given first, immediately followed by the ether, and the apparatus is so constructed that you can continue the use of the ether until complete narcosis is produced. Some one spoke of the ease of administering Somnoform. This is in its favor and our new anesthetic must possess this quality. It should be a drug that is easily given. It must be portable, so that we can handle it readily and easily. The objection some of you have to gas is that we cannot conveniently carry it around, which is quite true. Our new anesthetic should not possess any physical qualities that will render it objectionable. As educated men, we ought to be very careful in administering anesthetics. These drugs are very, very strong, and they are capable of taking life.

In speaking to a physician the other day about a new drug, he assured me that it produced a beautiful narcosis, but added, ''I killed a patient with it last week.'' So you see we must be exceedingly careful if we do not have a similar experience.

We must give anesthetics, and I suppose in the giving we will produce death now and then, but I want always to be so thoroughly familiar with the procedure that I will be on the safe side. And I also want my patient thoroughly prepared that no danger may arise from neglect in this direction. See that the body, outside as well as inside, is in fit condition to receive the narcotic.

And now I have spoken too long. I appreciate very deeply your kindness in receiving this paper as well as you have.

THIRTEEN THOUSAND ADMINISTRATIONS OF NITROUS OXID WITH OXYGEN AS AN ANESTHETIC.

By Charles K. Teter, D. D. S., Cleveland, Ohio.

THIRTEEN thousand successful administrations of nitrous oxid and oxygen by one anesthetist covering a period of nine years for practically every kind of an operation to its completion, under varying degrees of hazard, and varying in time from a few minutes to three hours, furnishes sufficient data, it seems to me, to establish to some degree, at least, the efficiency of nitrous oxid with oxygen as an anesthetic.

I realize that this declaration makes it necessary for me to provide the proof, which I am prepared to do, although, for the lack of time, it will be out of the question to review very many of the interesting cases. It will be

---

Read in the Section on Stomatology of the American Medical Association, 1909. Published in THE DENTAL SUMMARY by special arrangement with the Journal American Medical Association.

competent, however, to select for illustration a few cases, which seem to me to substantiate my statement. If any one cares for further proof than will be set forth in this paper, the thousands of cases of which I have a record are at his disposal.

Nitrous oxid with oxygen as an anesthetic has not a very substantial record at present, owing to the limited number of cases to report on, and this makes it apparent that it is not occupying the place it should among the recognized efficient general anesthetic agents. This being the case, I desire to take up briefly some of the more important features connected with this particular anesthetic before reporting the cases I have selected.

I shall pass over the chemical and physical properties of the gases, as most, no doubt, are familiar with them.

In taking up this line of work I first employed nitrous oxid with varying percentages of air, but I found, as others have, that the character of nitrous oxid anesthesia was entirely changed by the substitution of pure oxygen for the air. As a result of this change, nitrous oxid with oxygen has been given a prominent place in surgery today .

The profession in general has been extremely slow in taking up nitrous oxid with oxygen as an anesthetic in general surgery, owing mainly, I think, to three factors: (1) an imperfect apparatus; (2) lack of skill in its administration; (3) the expense. Happily there have been a few of us who have devoted not only a great deal of time, but also spent considerable money in developing this form of anesthesia because we recognized its well-known pleasantness and safety.

The first reports that we have of cases in which oxygen was used with nitrous oxid in producing anesthesia were made by Dr. E. Andrews of Chicago, in 1868, but he did not use it to any extent nor did he get any one interested in it at that time. It was ten years later that Paul Burt of France went into this subject thoroughly. He carried out some elaborate and expensive experiments, but he was laboring under a wrong theory, so his methods were never adopted. Dr. Burt proved, however, that nitrous oxid was a true anesthetic, and that asphyxiation was only concomitant, and not the cause that produced anesthesia. Dr. Frederick W. Hewitt of London has done more to bring this anesthetic before the profession than any one man. His book, "Anesthetics and Their Administration," is the best on the subject that has ever been published. He has had very extensive experience with all anesthetics, as he has devoted his energies exclusively to anesthetics for a long time. He, however, has not had the experience with this particular anesthetic that some men in America have. He has used it only in slight operations and of short duration. The longest time that he speaks of administering it continuously was fifty-two minutes for a minor case for the dressing of a wound and adjusting splints. The list of operations in which he employed nitrous oxid and oxygen are given by him as follows: "Syme's amputation, lithotrity, removal of breast, excision of varicose veins, varicocele, removal of ossicles of internal ear, resection of patella, removal of necrosed bone from a tuberculous hip, several intrauterine operations and for a large number of minor operations." There are many men in this country who are using nitrous oxid and oxygen for practically every operation that is being done by the surgeons of today. The indication for nitrous oxid and oxygen as the anesthetic is not governed by the nature of the operation, but by the physical condition of the patient. When the operative risk is great, nitrous oxid with oxygen is indicated, and the mortality rate is greatly reduced.

Since the discovery of oxygen by Priestley in 1774 it has held a more or less prominent place in medicine and surgery. The effect of the inhalation of oxygen on the system is acknowledged by all to be beneficial. Brambridge says "that oxygen influences the quality of the blood, that this improvement is in the direction of an increase in the red corpuscles, that the white corpuscles are not influenced by it, and that clinically it effects a marked improvement in the patient." Oxygen is a slight respiratory and cardiac stimulant and is a specific in asphyxia. It has but little effect on blood pressure.

EFFECT OF NITROUS OXID AND OXYGEN ON THE ORGANISM

Let us now consider for a few minutes the effect of nitrous oxid and oxygen on the organism. The gas on entering the lungs is distributed throughout the alveoli and is taken up by the blood and passes to the lymph. As the nitrous oxid comes into contact with the delicate nerve cells an action is brought about that causes a temporary cessation of their functional integrity. The most highly organized centers are first and chiefly affected; but gradually all succumb until the respiratory and cardiac centers are paralyzed. The rate of absorption of nitrous oxid and oxygen will depend on numerous conditions: i. e., temperature of the gas, temperature of the blood, rate and depth of respiration, the rate of capillary flow through the walls of the alveoli. It is well known that the absorption of anesthetic vapors takes place much more readily if the temperature of the vapor when inhaled is about that of the blood. I have found that when nitrous oxid with oxygen is administered warm the patient passes into the anesthetic state more quickly, more quietly and with less disturbing effect to the respiration than when the gas is given at lower temperatures. With warm gas the patient, as a rule, gradually and quietly passes into a peaceful sleep without the least resistance. The narcosis obtained is deeper, relaxation is more complete, cyanosis is almost entirely absent, intercurrent asphyxia is less likely to be brought about by reflex stimulation from the operative manipulation, which might interfere with respiration. There will be no postoperative bronchitis or pneumonia following inhalation of warm gases. Another feature is the smaller amount of nitrous oxid required. Nitrous oxid and oxygen given at an ordinary temperature will require on an average 250 gallons of nitrous oxid and 40 gallons of oxygen for an hour's anesthesia. When the nitrous oxid with oxygen is administered warm or at about the temperature of the blood, 150 gallons of nitrous oxid and about

40 gallons of oxygen will suffice for an anesthesia lasting an hour. A smaller amount of nitrous oxid will be required for the second hour of anesthesia, but a larger amount of oxygen will be necessary.

The elimination of nitrous oxid and oxygen takes place principally through the pulmonary blood stream and respiratory tract. On the withdrawal of the anesthetic the alveolar tension falls below the blood tension, and the elimination commences. The rapidity of elimination will depend on the freedom of the air tract. the depth and efficiency of respiration, for on this good circulation depends. If a good respiration and circulation are present on the withdrawal of nitrous oxid and oxygen, recovery takes place in a very few minutes. The patient will show symptoms of recovery within sixty seconds after a profound anesthesia which may have lasted two hours, and will be conscious within three minutes. At times when poor circulation and respiration are present, recovery will be much slower, and if there has been much surgical shock recovery will be still slower. Recovery may be hastened greatly by administering pure oxygen every few inhalations.

I have used nitrous oxid with oxygen many times as the anesthetic throughout the following operations: laparotomies, consisting of hysterectomy, salpingectomy, oöphorectomy, appendicectomy, cholecystectomy, choledochotomy, gastrectomy. gastroduodenostomy, uretrosigmoidostomy. Other operations, such as abdominal Cesarean section, prostatectomy, removal of large tumors and inflammatory adhesions; radical operations for the cure of hernia, varicocele, hydrocele and orchidectomy; amputations of breasts, amputations of extremities, and a large number of thoracentesis. If this anesthetic is administered skillfully it is about ideal for the operation of thoracentesis, for a small amount of nitrous oxid will produce anesthesia and a large percentage of oxygen can be given to the starving lung. In brain surgery nitrous oxid has been especially advised against, owing largely to the asphyxiation that is concomitant with the administration of nitrous oxid and air. For while the addition of air will lessen to some extent the asphyxiation of nitrous oxid, it will not suffice to eliminate it entirely; if air is added to overcome all the asphyxiation the nitrous oxid loses its effect as an anesthetic. Nitrous oxid with varying proportions of oxygen, however, if skilfully given, is a different proposition. My experience in this line of work has been good, for I have not had a single case in which difficulties arose.

EFFECT OF NITROUS OXID ON THE BRAIN

It is interesting and very instructive to observe the effect of nitrous oxid on the brain and also the effect of the oxygen. I have noticed in the cases which I shall report later that when the patient inhales pure nitrous oxid the brain begins to lose its natural pinkish color in about fifteen seconds, and at times much sooner than this. If the inhalation is continued without air or oxygen the brain continues to become darker. If this is continued to the third stage of anesthesia, the brain will have the appearance of stagnant blood and will be greatly dilated. The dilatation is concomitant with the discoloration, and if there is much cyanosis present the brain will be greatly discolored and will protrude through the opening in the skull. What is the cause of this discoloration and dilatation? Is it the effect of the nitrous oxid, or is it simply the asphyxial element caused by anoxemia? The cause of this change was clearly shown in a case I have reported elsewhere, but as it will illustrate my point here I will again refer to it.

CASE 1.—*Patient.*—A lad, aged 10, while playing on a fence in some manner fell off, landing on his head. The bruise was near the left side, causing an epidural hemorrhage. The pupil of the right eye was extensively dilated and the muscles of the same eye were paralyzed. There was not even a scalp wound. He was in a comatose condition when picked up, and continued in this condition for about twelve hours. An operation was decided on, but it was undertaken with grave fears on account of an exceedingly weak thready pulse and rapid jerky respiration.

Anesthesia.—I started the administration with about 8 parts of oxygen and 92 parts nitrous oxid, increasing the oxygen gradually until about 12 parts of oxygen and 88 parts of nitrous oxid were being given at the end of sixty seconds. The patient passed into complete surgical anesthesia within this time. Respiration became more rhythmical, the pulse less rapid and the tension much improved; in fact, the patient was in far better condition than before the anesthetic was started. An opening the size of a half dollar was made in the skull and a large quantity of clotted blood was removed. As everything was going nicely I carried out the following experiment: On decreasing the oxygen to about 3 parts with 97 parts nitrous oxid in about ten seconds a change in color was noticed in the brain. At almost the same instant a swelling up of the brain occurred. As the anesthetic was continued the brain gradually became very dark and dilated to the extent that the entire cranial cavity was soon filled, and the brain commenced to protrude through the opening. The oxygen was increased at this point to about one-half of the mixture, and after only four inhalations it was noticed that the brain was receding and the natural color was restored rapidly. The brain had regained its normal color and position within fifteen seconds. This discoloration and dilatation were concomitant and could be brought about at will by increasing or decreasing the oxygen.

CASE 2.—*Patient.*—A man, weighing about 240 pounds, who was operated on for brain abscess. This patient was in bad condition; temperature 107; he also had degenerated vessels and heart. This anesthetic had been given him twice before; once for a frontal sinus operation and once for a mastoid operation, all within six weeks. He had taken the anesthetic nicely on the two former occasions, so it was given for this more extensive operation without much apprehension. I was able to produce a profound anesthesia with about 90 parts nitrous oxid to 10 parts oxygen from the start, gradually increasing the oxygen to 15 parts within the first two minutes. The patient passed into profound anesthesia within two minutes. When the skull was opened I had good anesthesia without any cyanosis or other asphyxial symptoms and the brain was of good color and not dilated. I kept an even anesthesia throughout and had no change of color or dilatation of the brain at any time.

All of my brain operations show the same phenomenon. If the anesthesia is accompanied by cyanosis, the brain will be not only dark in color, but dilated as well. Consequently I affirm that the dilatation and congestion were not due, *per se*, to the anesthetic action of nitrous oxid, but constitute an entirely asphyxial manifestation. The asphyxial factor may enter into any anesthesia, and if it does the afore-mentioned phenomenon will be present, whether the anesthetic agent be chloroform, ether, or nitrous oxid. It is more apt to accompany nitrous oxid than any of the other anesthetic agents, from the fact that nitrous oxid has to be administered almost in its pure state. The asphyxiation that we have with nitrous oxid anesthesia is not dangerous, however, as compared with that produced by ether or chloroform. In brain surgery nitrous oxid alone or administered with air is not a good anesthetic; but nitrous oxid with varying proportions of oxygen is without question a good anesthetic in brain surgery.

CASES SHOWING SPECIAL POINTS

I will mention a few cases in order to show some points of special interest, such as length of narcosis, extreme ages of patients, physical condition, primary shock and fatality.

Under length of narcosis, I have the following cases:

CASE 3.—*Patient.*—Mrs. S., aged 32; very nervous; somewhat emaciated; valvular insufficiency; compensation fairly good.

Operation.—Hysterectomy, appendicectomy. Hemorrhage profuse and troublesome. The uterus contained a fibroid tumor weighing 22 pounds.

Anesthesia.—Induced in two minutes; some reflex effect on respiration when incision was made, but no other movement of patient. Profound anesthesia was easily maintained with about 88 parts nitrous oxid and 12 parts oxygen. This amount varied somewhat but was about the average. Anesthesia was maintained without one breath of air or other anesthetic. Pulse at the beginning was 98, at the close just before the anesthetic was removed 112. General condition good under the circumstances.

Postoperative Condition and History.—Consciousness was regained within three minutes. Patient vomited during recovery only; no more sickness. Length of operation, three hours and four minutes.

CASE 4.—*Patient.*—Mrs. G., aged 45; nervous temperament; general condition fairly good, but the patient had suffered for years from pelvic trouble and chronic gastritis accompanied by severe vomiting. Nitrous oxid with oxygen indicated on account of the gastric disturbance.

Operation.—Patient was found to have a large intraligamentary cyst, complicated by dense and extensive adhesions, with an involvement of both tubes. A double salpingectomy was performed, together with removal of the cyst and adhesions. Bleeding from the denuded surfaces was very troublesome, making the operation a long one. The patient was given morphin 1-6 gr. and atropin 1-150 gr. one-half hour before the operation. The morphin and atropin was given on account of certain conditions that indicated that the patient was not susceptible to anesthetics and complete relaxation was imperative, which we wanted to obtain without the aid of ether.

Anesthesia.—The patient was anesthetized in about three minutes. There was a certain amount of cyanosis present and some rigidity during the first fifteen minutes. After this time a good color and complete relaxation was obtained throughout the operation, which lasted two hours and forty-eight minutes. The pulse remained good, being at the close only a little faster than at the beginning, and was full and strong.

Postoperative Condition.—Patient regained consciousness within five minutes. Nausea and other postanesthetic complications were entirely absent.

I have had many cases in which it has been necessary for me to continue the administration of nitrous oxid and oxygen for two or three hours. As to the length of time that nitrous oxid and oxygen could be continued with safety, I believe that this anesthetic can be given longer and with less danger than any of the general anesthetics, excepting none.

In looking over the cases to ascertain the age, I find one which I think will be of interest. It is that of the youngest person to whom I ever administered nitrous oxid and oxygen, and is as follows:

CASE 5.—*Patient.*—A baby boy, whose birth was induced at the eighth month, being at the time of operation three months old. Operation, circumcision and amputation of toe.

Anesthesia.—No inhaler was used for this case, but, instead, I forced the nitrous oxid and oxygen through the tube, holding it in front of the patient's mouth. Narcosis was induced in about forty seconds with a mixture of about 5 parts oxygen and 95 parts nitrous oxid. There was a certain amount of adulteration caused by the non-exclusion of the air, but, notwithstanding this, it was soon necessary to increase the percentage of oxygen in order to prevent muscular jactitation and clonic spasms. Perfect anesthesia was maintained to the completion of the operation, about thirty minutes. On the removal of this attenuated vapor recovery took place within forty seconds. The child seemed as bright as ever, and the sympathetic mother, in her anxiety, put the child to her breast at once and it nursed without any ill effects.

I have administered nitrous oxid and oxygen to over 5,000 children, principally for tonsillectomy, tonsillotomy, adenectomy, circumcision and dental extractions. For these oral operations the nasal inhaler is employed, and profound anesthesia is maintained to the completion of the operation. Available anesthetic is at the operator's command until the operation is completed, be that in two minutes or two hours.

The aged, as a rule, are good subjects for nitrous oxid and oxygen, and take it nicely. As with children, it is necessary to keep a close watch of all symptoms, for the effect of the anesthetic is very rapid in such cases. I have administered it to a great many aged people, some presenting practically no abnormality except that which would be expected in the aged, but others in which a general active and chronic degeneration was extensively manifested. In such cases, as a rule, I have been able to obtain satisfactory anesthesia and have no cause for worry. There are exceptions to this, however, and I have had my resources taxed to their utmost.

In my experience gained from 13,000 nitrous oxid and oxygen anesthesias, I have learned that it is not always best to continue with nitrous oxid and oxygen under all circumstances, for it may be next to impossible to retain the desired depth of narcosis in certain cases. In some cases it may be better to resort to a more stimulating or tolerable anesthetic either in sequence or combination.

I have had a few cases in which respiratory, cardiac and composite (Hewitt) shock was manifested during the operation, and probably more than would be met with under 13,000 average ether anesthesias, owing to the fact that nitrous oxid with oxygen was resorted to in many of these cases for the reason that there was some abnormal condition present and the operative risk was great. Under these circumstances we would expect to encounter shock quite frequently.

I have had but one fatality on the operating table, and this was a primary circulatory failure, in no way due primarily to the anesthetic. I have barely missed several, however, by the patient dying a few hours before the time set for the operation.

Case 6.—This was one in which composite shock was met, owing to the sudden release of tension of the abdominal cavity.

Patient.—Mr. I., aged 86, obese, plethoric; senile myocarditis, and very rapid pulse (130), hard to discern in the external carotid, facial or radical arteries.

Operation.—This was performed for stone of the bladder. The abdomen was greatly distended from the retention of urine for four days. Suprapubic lithotomy was performed.

Anesthesia.—This was induced slowly, for any effort to hasten obstructed the breathing. After about five minutes' satisfactory anesthesia had been induced and the incision was made and the bladder exposed. Respiration was somewhat labored but patient was in good condition and had a good color, indicating good oxygenation. The pulse was not easily obtained by palpation but was quite distinct by auscultation.

It was the intention to remove the contents of the bladder gradually, but the distention was so great that when the incision was made the bladder burst and the contents flew to the ceiling. Respiration ceased at once; no pulse or heart sound could be detected, eyes fixed and staring, pupils enormously dilated and all reflex abolished. Artificial respiration and lung inflation with pure oxygen were resorted to at once. Heart sounds commenced within thirty seconds with almost immediate inspiration, which was repeated after a few seconds and normal respiration and circulation reestablished. Pure oxygen was continued, alternating with air until the corneal reflex was established, after which the nitrous oxid with oxygen was used and the anesthesia continued without mishap to the completion of the operation. The patient recovered consciousness within eight minutes and did not seem greatly depressed.

The following case is reported for the reason that it is the only death that I have ever had. Nitrous oxid with oxygen was the anesthetic used. I will give a detailed report of this case in order to show that the anesthetic was not the primary cause.

Case 7.—*Patient.*—Mrs. M., aged 60, had been vomiting for over a month and was in an exhausted condition from starvation. The cause of her trouble was very obscure and symptoms were lacking. Gallstones were finally diagnosed. Owing to her extremely exhausted condition an operation was considered hazardous but imperative. The persons interested were aware of the likelihood of a fatal termination so were prepared in a way for what followed. I found a very weak, thready, irregular pulse running at the rate of 150, and hardly perceptible in the radial artery.

Anesthesia.—The anesthetic was started with 95 parts nitrous oxid and 5 parts oxygen. The oxygen was increased rapidly up to 10 parts. The patient was found to be fully anesthetized after she had taken about eight inhalations. It was necessary to increase the oxygen to 20 parts or more to prevent too deep anesthesia. There was a peculiar livid appearance in the face but there was no cyanosis or any indication of anoxemia. The respirations being unhampered and regular, the pulse was about as rapid as at the beginning, but was of better tension and more regular.

Operation.—This was begun within two minutes. There was no noticeable alteration in either respiration or circulation when the incision was made. The corneal reflex was abolished from the time anesthesia was noticed to be present. It was necessary to increase the oxygen and diminish the nitrous oxid greatly to prevent an overdose of the anesthetic. By the continued application of the phonendoscope the heart was found to be acting fairly well. Everything was going along nicely until work was begun in the cystic duct and gall bladder; then respiration became uneven and forced and the heart sounds were barely discernible. The operation had been in progress for fifty-five minutes. There was no cyanosis present in the face and oxygenation seemed to be perfect, but it was noticed that the fingers of the patient were blue. This blueness gradually crept up the hands and arms, and as a large increase of oxygen and the discontinuance of the nitrous oxid did not remedy the condition we at once used pure oxygen, atropin, strychnin, but with no results, as the pulse and respiration ceased.

Artificial respiration and lung inflation with pure oxygen and other resuscitating measures were carried out for forty minutes without a sign of reanimation. This death was due to shock and primary cardiac failure. The anesthetic was blamable only in so far as it added its influence in bringing about a lower resistance of the organism.

CONTINUOUS AUSCULTATION

I wish to speak of the importance of continuous auscultation of the cardiac and respiratory rhythm during the entire course of general anesthesia. As far as I am aware I was the first person to bring into use this method of continuous auscultation during general anesthesia. My records will show that I have been using this method since May 2, 1906.

On the above date I used it for the first time, and have been using ever since a small stethoscope known as Dr. Kehler's. It was used in connection with a case for an extensive laparotomy performed by Dr. Hunter Robb at Lakeside Hospital, I used this because I felt the need of a more accurate method of ascertaining the condition of circulation during anesthesia. In the administration of nitrous oxid and oxygen, both hands of the administrator are kept busy most of the time, especially if things are not going well with the patient. From necessity I looked for some means of ascertaining the state of the heart and respiratory sounds, and purchased an improved Kehler's stethoscope. This little instrument is especially adapted for this purpose, as it consists of a flat disk to which a rubber tube is attached, extending to the ear of the anesthetist. The stethoscope, placed on the chest of the patient, will usually stay there without being held. If neccessary, adhesive plaster can be used to hold it if there is any tendency for it to be displaced.

An anesthetist will find this method to be of great value to him in the administration of all anesthetics. Uninterrupted information will be given to any and all change in the heart beat and respiration. When anesthetizing a bad subject in whom the operative risk is great, there is nothing that gives me so great a feeling of confidence as that of continuous auscultation. Every variation of heart sound is at once discernible, and what might be serious complications can be averted by the premonitory symptoms thus made manifest.

METHOD OF OVERCOMING RIGIDITY

One of the main objections to nitrous oxid with oxygen as the anesthetic in major surgery is the rigidity sometimes encountered. In my practice about 10 per cent. of the patients cannot be fully relaxed in cases in which complete relaxation is required. Not caring to resort to other general anesthetics for this 10 per cent. of cases, I have used numerous drugs before and during anesthesia. My best results were obtained when $\frac{1}{4}$ to $\frac{1}{8}$ gr. morphin sulphate and 1-100 to 1-150 gr. atropin were given hypodermically one-half hour before the operation. At least 8 per cent. of the 10 per cent. can be satisfactorily handled under this treatment. By this method we get a more tranquil anesthesia, accompanied by almost complete relaxation even for rectal and like surgery. A much larger percentage of oxygen can be given and a smaller amount of nitrous oxid is necessary, so that a beautiful anesthetic state is produced. In these exceptional cases in which any anesthetic would be taken badly, I find it far safer to precede the nitrous oxid and oxygen with the morphin and atropin, because the patient would have to be almost asphyxiated in order to produce the desired depth of anesthesia without it.

I do not advise the use of morphin as a preliminary to nitrous oxid and oxygen in the hands of a novice or one of little experience with this anesthetic agent, however. The reason is that respiration is more apt to cease, which is the tendency under nitrous oxid. This being so, it is much harder to re-establish respiration than if morphin had not been used. In the hands of an expert, this combination is about ideal for prolonged anesthesia in extensive major surgery. One who is taking up the administration of nitrous oxid and oxygen should undertake only simple cases until he has fully mastered the more or less complicated apparatus and has gained experience with this evanescent agent. If the desired depth of anesthesia can not be obtained in his hands with the nitrous oxid and oxygen alone, he should resort to ether in combination with the nitrous oxid and oxygen. It would be much safer probably than the morphin.

APPARATUS REQUIREMENTS

In order to administer nitrous oxid and oxygen properly it is essential that a perfect working apparatus be used. The apparatus should embody the following requirements: There should be four cylinders attached, 2 containing nitrous oxid and 2 oxygen. When one cylinder is exhausted, there is no time lost in turning to the other one. The empty one can be taken off later and a full one replaced, so that the anesthetist need not worry lest his supply should fail him at an inopportune time.

There should be means of warming the gas, not theoretically but practically, so that the gas is warm when it is inhaled. All channels from the bag to the inhaler should be large and unobstructed, so that no strain will be thrown on the respiratory mechanism. In fact, the gases should be under a slight pressure in the inhaler if the best results are to be obtained. This is accomplished by a delicate spiral spring on the expiratory valve. The two gases should not be mixed in the bags, but just before entering the inhaler. A transparent face-piece is advisable, so that the features of the patient may be always visible. If there is retching it can be seen if vomit comes from the mouth without raising the inhaler. If a mouth-prop is being used it can be seen whether it is in place or not. Such an inhaler is more easily kept aseptic. There should be means for nasal inhalation for all work in the mouth or throat, so that nitrous oxid and oxygen can be continued any length of time.

There is no reason why anesthesia should be short for operations in the mouth or throat if the operation requires time. There should be an attachment, so that varying percentages of ether can be administered in combination with the nitrous oxid and oxygen or in sequence. The apparatus should embody all the above requirements and should be of a portable nature, so that it can be easily carried from place to place.

TECHNIC FOR OPERATIONS ELSEWHERE THAN IN MOUTH AND THROAT

The technic for the proper administration of nitrous oxid and oxygen for an operation other than in the mouth or throat is as follows: A plentiful supply of the two gases is imperative. The two bags are filled with their respective gases. The valve from the nitrous oxid bag is opened just as the inhaler is adjusted on the face. The nitrous oxid is allowed to flow from the cylinder through the warmer to the bag and should be adjusted so the bag will be under a little tension all the time. After the patient has been breathing the pure nitrous oxid for a few seconds (the time will vary from five to fifteen seconds), about 2 or 3 per cent of oxygen should be admitted and this increased more or less rapidly as the symptoms indicating its need arise. As a rule, the patient should pass into profound anesthesia within two or three minutes, but complete relaxation does not take place until a little longer time has elapsed. When surgical anesthesia has been obtained it can be maintained as long as desired by the proper proportions of the nitrous oxid and oxygen. The symptoms of nitrous oxid and oxygen anesthesia are the same as those obtained with the other general anesthetic agents. I have no special guide to anesthesia under this anesthetic, but I watch the respiration, color of the face, heart sounds, and reflexes of eye.

It is important to keep a constant, even flow of nitrous oxid into the bag and to deepen or lighten the anesthesia by decreasing or increasing the amount of oxygen. I am able to obtain a more even anesthetic and more complete relaxation by this method than any other. The great trouble is to get the nitrous oxid to flow evenly.

If conditions are such that the desired depth of anesthesia and relaxation can not be obtained with the nitrous oxid and oxygen, a small percentage of ether, varying in amount, should be given without interfering with the amount of nitrous oxid and oxygen. By this means all patients can be successfully anesthetized. Just how often it will be neccessary to resort to the addition of ether will depend largely on the skill of the anesthetist. In my hands about 10 per cent. of the patients will require the additional help, if morphin has not been given previously.

TECHNIC OF OPERATION ON MOUTH AND THROAT

If the operation is in the mouth or throat the nasal administration is indicated, and this is accomplished by means of a small nasal inhaler. This inhaler covers only the nose and does not hinder the operator in the least. The technic for the administration is the same as with the face inhaler, with this difference. If a rubber pad is held over the mouth of the patient he is compelled to breathe through his nose until complete anesthesia has been induced. When work is commenced in the mouth or throat the inhaling valve in the inhaler is closed and the nitrous oxid with oxygen is forced through the nose into the mouth under sufficient pressure to keep the patient fully anesthetized as long as desired.

I have had over 1,500 tonsillectomies, tonsillotomies and adenectomies in which anesthesia was required for a few seconds to thirty minutes, and have not had a patient who could not be kept under to the completion of the operation. The advantages of this anesthetic in surgery of the mouth, throat and nose are that it is not unpleasant to the patient; anesthesia soon induced; any position of the patient can be utilized; the cough reflex is maintained, preventing inhalation of blood and tissue, quick recovery from the anesthetic state without nausea and vomiting, unless blood and tissue have been swallowed, and, above all, the safest anesthesia known. The same preparatory requirements should be carried out for nitrous oxid and oxygen as for other general anesthetic agents, except for minor operations, when only light and short anesthesia is required. Under such conditions nitrous oxid and oxygen can be administered satisfactorily in most cases.

DANGERS

The dangers encountered in the administration of nitrous oxid and oxygen are not many, but the condition and state produced are not natural, so neccessarily there are dangers of more or less extent. The principal danger of nitrous oxid and oxygen anesthesia is that of asphyxiation. The asphyxial element entering into the anesthesia is due to the necessity of administering nitrous oxid almost in its pure state, in order to bring about that degree of saturation neccessary to produce anesthesia. The asphyxial element is influenced also by the following factors: the susceptibility of the patient to the influence of the anesthetic, temperamnet of patient, freedom of the respiratory tract from obstruction, reflex effects of the operative manipulations and the skill with which the nitrous oxid with oxygen is being administered. A certain amount of cyanosis is not objectionable with nitrous oxid and oxygen anesthesia, as it does not necessarily indicate an overdosage of the anesthetic, for it is not caused by cardiac or respiratory depression, but is simply a capillary stasis due to insufficient oxidation, and clears up readily when oxygen is admitted. Asphyxia, however, should not be allowed to enter into the procedure too much for any great length of time, for there is a damming back of the venous blood, throwing more or less strain on the right heart, and congestion and dilation of the brain are produced. All this cannot fail to produce some deleterious effects if persisted in for a great length of time. The most noticeable effect from extreme cyanosis is a severe headache, which will not subside in some cases for two or three hours. It is hard to see how nitrous oxid could produce death except from asphyxiation, but I believe that this anesthetic can produce death without the asphyxial element entering into it at all. I have had cases in which I had an overdosage of the anesthetic (without asphyxial symptoms) to that extent that circulation was not discernible and respiration was all but imperceptible. This condition was quickly changed by a large increase of oxygen. I hope to bring out more along this line in the near future, as we are watching our hospital cases closely and hope to establish something authentic.

There is another condition which I have noticed about fifty times during my experience with this anesthetic, and that is the tetanic cramps in the hands, arms, feet and legs. The hands are so cramped that the thumb is drawn to the center of the palm and resists force to remove it. This condition has occurred in short cases mostly, but in one case it came on after the patient had been under the anesthetic about half an hour and continued through the anesthetic about half an hour longer. On recovery the patient experienced some pain in the hands, arms, feet and legs. A brisk rubbing was maintained for twenty minutes, when the condition subsided. Pure oxygen and strychnin were administered also. In every case in which this condition was manifested the patient's physical condition was either in bad shape or they were of a neurasthenic temperament or both. I speak of these things to show that there is a great deal yet to be learned about nitrous oxid and oxygen as an anesthetic.

Blood pressure is slightly raised during nitrous oxid and oxygen anesthesia, but this is influenced greatly by the asphyxiation that accompanies it. This point and other effects on the blood have been brought out by Drs. Hamburger and Ewing of Chicago in their experiments. These experiments were not conducted over a long series of cases, but enough was brought out, I think, to prove the correctness of the statement that "nitrous oxid anesthesia does not reduce hemoglobin and thereby cause anemia; that it does not cause increased hemolysis; that what apparent change it does produce on hemoglobin and red cells is transient and of no clinical significance .... that nitrous oxid causes no permanent effect of any significance, from the standpoint of blood changes."

The increase of venous blood pressure during nitrous oxid and oxygen anesthesia was manifested very forcibly in a case we had lately. The patient had been burned badly some time before, and her right side from the hip to the shoulder, including the arm, was denuded of epidermis and was covered with unorganized granulated tissue through which frail vessels ramified. The patient was anesthetized in about two minutes with nitrous oxid and oxygen, passing into profound anesthesia without any cyanosis. In about five minutes it was noticed that the veins in this frail tissue were filling up and bulging out in places as large as a man's finger. Then they would rupture. The bleeding was not troublesome, as the vessels were not much more than capillaries. During this phenomenon oxygen was increased to such an extent that a good florid color was produced; then the swelling of the vessels would subside somewhat, but not entirely. This was a practical demonstration as to the increased blood pressure in the veins under nitrous oxid and oxygen anesthesia.

ADVANTAGES

Of all that has been said in favor of nitrous oxid with oxygen as an anesthetic, there is nothing more important or more in its favor than the freedom from nausea and vomiting. This freedom from nausea and vomiting will depend to a great extent on the evenness of narcosis produced, preparation of the patient for the anesthetic, and purity of the gases. With a patient properly prepared and anesthesia evenly maintained with pure nitrous oxid and oxygen, nausea and vomiting will be a rare occurrence, indeed. In all my work I have had only five cases in which persistent vomiting was encountered, and in none of these did it last over six hours.

As a rule patients who have been operated on under nitrous oxid and oxygen anesthesia get along better than when other general anesthetics are used. They are less sick, can take nourishment quicker, have fewer complications, and in every way have a better chance for a speedy and complete recovery.

My object in presenting this subject before a section of the American Medical Association is to encourage the professional anesthetist to take up nitrous oxid and oxygen as a general anesthetic and develop it to a science. It is essential that great advancement must be made along the line of anesthesia to keep pace and to the forefront with other branches of medicine and surgery, and this can be accomplished only by the efforts of the medical man as a professional anesthetist.

ABSTRACT OF DISCUSSION.

Dr. E. S. Talbot, Chicago: Has Dr Teter paid any attention to the urine in these cases? Did he notice the urinary acidity and indicanuria?

Dr. Teter: The patients have been watched by the surgeon afterward, and they have not reported any case in which there was irritation of the kidneys.

Dr. Talbot: My practice is such that I use anesthetics very little along that line, and I have only noticed in three or four cases excessive urinary acidity and considerable indicanuria. Now, whether the administration of the nitrous oxid has anything to do with that I do not know. It would seem to me a desirable thing to take up along the line of Dr. Teter's work, for he has opportunity to observe such a large number of cases.

Dr. S. McCurdy, Pittsburg, Pa.: The subject of anesthetics has been discussed and various anesthetics introduced as a substitute for ether from time to time, but the general surgeons throughout the entire world and in America especially depend on ether. In certain sections of this country and in Europe they use chloroform. From time to time we have introduced anesthetics which are more prompt in their action; but to get the best results from any anesthetic it is necessary to have a man skilled in the administration. Does Dr. Teter know to what extent this combined anesthetic has been introduced in the various parts of the country, and to what extent has it been substituted for chloroform and ether. I tried somnoform for a while, but had a scare or two and went back to ether or chloroform. I use ether in almost all my operations.

Dr. John E. Nyman, Chicago: It so happens that I can speak of a case of nitrous oxid and oxygen anesthesia for prolonged surgical operation. The patient, a woman, had mitral insufficiency and marked albuminuria. Both the diagnosing physician and the operating surgeon said that the administration of the ordinary anesthetic would probably result in uremic poisoning within ten days, provided the patient did not die from cardiac insufficiency during the operation. Nitrous oxid and oxygen anesthesia was finally suggested. The operation was for ventral hernia, in which there were many adhesions and many evidences of adhesions of the intestines. The anesthetic was begun about 9 a. m., and in twenty seconds the patient was completely anesthetized. At 9:45 the patient was in bed and had so far come out of the anesthetic that she was able to talk. About an hour after emerging from the anesthetic she had a period of severe hysterical reaction, which, however, passed away very quickly. There were no sequelæ of any importance following the operation. At 1 o'clock she said she was very hungry, and liquid nourishment was given her. At 6 o'clock that night solid food was given her. I might say that it was found that the adhesions were producing symptoms of obstruction simply from pressure. No resection of the intestine was performed. There is no question but what, in operations on the intestines, continued muscular retching after the operation must have a deleterious effect on the result of the operation. In this case it was absent. A little irregularity of the heart developed during the anesthesia, but that passed away on increasing the oxygen. There was absolutely no effect, either immediately after the operation or subsequently on the character of the urine, and seemingly the kidneys had not been affected as a result of the anesthetic. I have since been instrumental in having the anesthetic used in three other similar cases. It seems to me that it is an ideal anesthetic.

Dr. W. W. Babcock, Philadelphia: I think the subject of anesthesia has not been developed along any of its lines so fully as it should be. I have tried this method of nitrous oxid with oxygen to a limited degree and in some cases have been very much pleased with it. The only serious result was in the case of a child with an affection of the pharynx; the child suddenly became pale, respiration ceased, and it required artificial respiration for a considerable time to resuscitate the patient.

The problem in regard to anesthesia is not alone the anesthesia produced, but the ease with which the surgeon can do his work. In certain parts of the body there must be good relaxation or the surgeon will be hampered. Especially is this true of the abdominal cases; the patient may be entirely unconscious, but the muscles may remain so rigid that the operation will take twice as long, and may require much more violent manipulation of the tissues. Although the mortality from the anesthesia may be low, the operator's mortality may be increased from the extra time and manipulation required. Thus it is that at times nitrous oxid may indirectly increase the operative mortality. I think that it is usually difficult in abdominal operations to secure as complete relaxation with nitrous oxid and oxygen as can be obtained with ether. I confess I am not able to depend upon skilled anesthetists; I have to depend on the resident physicians as a rule. As very few residents develop sufficient skill to maintain nitrous oxid-oxygen anesthesia an hour or more, I have restricted this anesthesia for operations on the head, arms, legs, etc., parts which might be immobilized should the patient move. I have feared to undertake abdominal operations, owing to the fact that the patient might be over anesthetized and in spasm, or that he might be permitted to come out. There are other anesthetics which have not been developed, such as hyoscin, morphin, etc. Combinations of these drugs I think form an ideal anesthetic for selected cases from the point of comfort of the patient, although they are not always the most desirable for the operator. After a single hypodermic injection the patient may imperceptibly lose consciousness, and then after a period of time which may last three hours, five, ten or twelve hours, the patient gradually regains consciousness, entirely oblivious of the fact that anesthesia has been produced or that anything has been done. If one will select patients requiring serious operation, from the debilitated, who are over 35 years of age, and will carefully use this method of narcosis, excellent results may be obtained.

The subject of local anesthesia has not been fully developed. The control of tic douloureux by injecting alcohol into the nerves as they emerge from the base of the skull, demonstrates a method by which we may anesthetize the entire distribution of a nerve trunk, for example, of the inferior maxillary distribution of the fifth nerve. The foramen ovale may be reached by running a syringe directly above or below the middle of the zygoma, the needle being directed upward, backward and inward until one reaches the pterygoid plate. Then the needle is deviated so it goes by the edge of the pterygoid plate into the nerve. In this way the entire distribution of the third division of the trifacial can be anesthetized. Introducing the needle backward, inward and upward from the posterior edge of the malar bone, one can pass to the foramen rotundum and block another division, anesthetizing the upper jaw. Anything that develops these methods of anesthesia will be of inestimable value. Most of us are only trained in one anesthetic. It would be a splendid thing if we could be broadly trained, not only in ether anesthesia, but in local and spinal anesthesia, in nitrous oxid and the narcotics. We seem to have lost or neglected some of the ancient anesthetic skill of the Greeks, Romans and Chinese.

DR. CHARLES K. TETER, Cleveland, O.: I have never had a patient yet whom I could not get under the effect of nitrous oxid and oxygen. I have had cases in which it was impossible to get perfect relaxation, but never had a patient whom I could not get thoroughly unconscious if I had an assistant to hold him during the excitable stage. If you can not apply the anesthetic and exclude atmospheric air you may have patients who will become excited and unmanageable. With sufficient assistance there is no reason why one can not anesthetize every patient.

I do not advocate one anesthetic for every condition. Certain people are more or less susceptible to certain drugs. If I find a patient taking one anesthetic badly I change to another. I do not think an anesthetist is fully capable unless he can give any anesthetic and recognize when a change would be beneficial.

For the last three years nitrous oxid and oxygen has been taken up wonderfully by the medical profession. In Chicago last year I was surprised to find how much nitrous oxid was used in general surgery. At Cook County Hospital they have been trying to get results with nitrous oxid. Practically all the leading hospitals of Chicago, I found, were using this anesthetic more or less. In Cleveland we have been using it for six years or more. I was the first to popularize nitrous oxid and oxygen for general surgery in Cleveland. There are now four others specializing with it. So many men think all they have to do is to get the apparatus and that then they can use nitrous oxid. No one should attempt to give any anesthetic without the proper instruction.

It is invariably my method to have a hypodermic of morphin and atropin given before any anesthesia. In this way I can use less of the anesthetic and more of the oxygen. Once in a while I have a patient whom I can not even get relaxed in this way. Then I pass a stream of oxygen and nitrous oxid over the ether, taking up a smaller or greater portion of ether as may be necessary to get relaxation. After that I discontinue the ether and do the operation with straight nitrous oxid and oxygen; but I keep away from the ether as much as I can on account of the after-effects.

The oldest patient I had was 92. The operation lasted about one hour and fifteen minutes. She took the anesthetic as nicely as any patient I ever had. I do not think age has any bearing; only I would be more watchful in a patient of advanced years on account of the condition of the blood vessels and the extra stress laid on them if there is much cyanosis accompanying the narcosis.

Another point I wish to bring up, and that is the question of taking up anesthetics as a specialty and sticking to it. The trouble is that the medical man has thought it beneath him to confine himself to anesthetics. Anesthetics are at the same place, one might say, that they were thirty years ago. This is not as it should be. The surgeons are all looking for the skilled anesthetist, and I find that the patients, when they understand it, as a rule, are willing to pay a skilled anesthetist his fee. I hope medical men will take up anesthetics and develop it as a science, so that the mortality from this cause may be greatly reduced.

MY EXPERIENCE WITH SOMNOFORM AS AN ANESTHETIC IN DENTISTRY

By H. M. Semans, M. A., D. D. S., Columbus, Ohio

Our journals, during the past few years, have had a large number of articles upon Somnoform; but these articles have principally dealt with physiological notes supplied by the literature used to advertise the material, and the description of the preparation of the patients with the proper administration of the anesthetic being obtained from the directions accompanying the material; on the other hand but little has appeared referring to an experience of its constant use after four or five years. So then I will try to give such an experience without attempting a scientific dissertation upon the reasons why it is a safe and sure anesthetic.

First of all let me say, I never advise somnoform, nor any other general anesthetic for that matter, without a great deal of anxiety; the knowledge of the tremendous power of such agents is as forcibly impressed upon my mind today as it was the first time I administered such an agent; I tremble inwardly for the safety of the patient during physical diagnosis and preparation, nor do I desire it to be otherwise; but instantly upon entering the administering period no thought occupies the mind, except the business at hand, and again neither do I desire this to be otherwise.

One almost constant characteristic, which at first was rather alarming, its very rapid action, has become really a source of comfort in its administration. It goes without saying, that almost all patients are exceedingly nervous and often frightened. The tendency to struggle after a few inhalations, should they retain any consciousness, is very strong in those who have little enough will-power during normal conditions, to behave; but somnoform in its rapid action obtains control of the patient before the subject has a chance to allow an exhibition of excitement to manifest itself. Whenever excitement or uneasiness does manifest itself, I have found that the admitting of a little air will almost invariably put an end to such conditions and that the patient immediately passes on under control. I believe in making use of every precaution or antidote useable in general anesthesia, and among such the pulse is kept in evidence by the assistant or one of the assistants as the case might be; the remarks of the one watching the pulse are almost invariably comforting and gratifying. One case of seeming bad heart action, where the pulse took two or three seconds between beats, brought forth from the very calm patient, after the work was over, that at times of long rest in a reclining position, the pulse would go down to forty, yet remain strong and steady. Nausea has followed in but few cases. The first case had a period of induction of fifty or more seconds, and the patient confessed to eating a very large noon dinner, immediately before the administration. The second case occurred late in the afternoon, she had received an administration early in the afternoon at which time the extraction was unsuccessful, being in great pain she took a stiff dose of whiskey, following up with a cheese sandwich and a bottle of beer, the whiskey she acknowledged during our physical examination, but the beer and sandwich remained unknown until they testified for themselves by their undesired presence. One patient has taken an administration three times, about a year apart in each case, intense excitement is invariably in evidence, with great muscular display of the entire body; the removal of the desired teeth, however, has always been accomplished, with the patient professing to have known nothing about the operation; the excitement commencing upon the extracting operation and ceasing upon the accomplishment of the same. During the third administration the pulse showed before induction 80, going to 90 during induction, 100 during anesthesia and excitement, with an immediate drop to 80 after excitement had ceased, went to 70 during the analgesic period and arose to 80 again upon return of complete consciousness.

A very common experience is the continuation of extraction during the analgesic period; and often times fragments or a missed root will be allowed to be removed by the patient even after complete return of consciousness, the same patient often being one who absolutely refused attempted extraction of any kind without a general anesthetic.

The indications of complete anesthesia are very easy to note. In fact the induction period of thirty to forty seconds is so invariable that the operator will in most cases depend upon time alone to indicate when to remove the hood. It is best always to allow the patient to take two full breaths of air through the inhaler before breathing the somnoform; explain, before the hood is placed that you desire the lungs filled full of fresh air; watch to see that the patient does so and if the first breath is a feeble one, insist strongly for a full inflation. The patient who follows out these instructions will almost invariably continue taking full inflations. The one who administers the anesthetic should watch closely the breathing, and at the slightest sign of the same stopping, air should be admitted either through the inhaler should the cessation be slight, or by the entire removal of the hood if cessation is marked. If air is given while the hood remains, care should be taken to see that the air hole is opened at the moment of inhalation, and not at exhalation.

Whenever it is desired to have a large amount of extraction, deeper narcosis may be obtained by keeping the inhaler on the face five to ten seconds longer; fifteen to twenty-five extractions are of not unusual experience under one administration. One patient made a record of four minutes of complete anesthesia during which time both the breathing and the pulse remained steady and strong. There has been but few cases of alarming symptoms. One patient had a sudden cessation of breathing after about twenty seconds of induction, the hood was instantly removed without, however, a return of lung action, while artificial respiration was being resorted to, the patient suddenly and forcibly plunged out of the chair, threw himself into a fighting position and fortunately for us all consciousness returned in an instant with good breath action; nothing was attempted that day, but the next day at his own solicitation somnoform was again given with no alarming results. There have been a number of cases where the anesthetic has been administered two to three times, without any undue conditions except one case. This patient took it well the first time and had the lower jaw cleared out; she decided, after ten minutes of rest, that she would like to have the upper jaw cleared away without waiting until another day; this was done, the operation being successful, and the patient had seemingly returned to complete consciousness when one of the assistants called our attention to the sudden collapsed condition of the patient. The pulse was very rapid and intermittent, the breath came in gasps, in fact she acted as though she had swallowed something which was obstructing the air passages: following this suggestion, a quick examination showed the tongue very forcibly balled back; drawing the same forward relieved the situation.

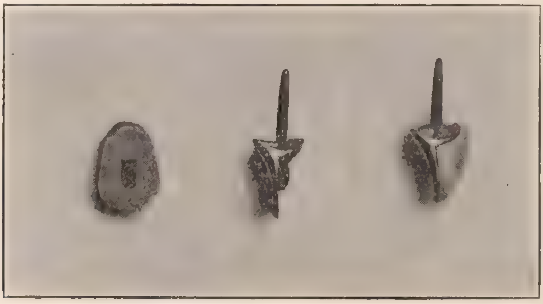
The calm quiet state that almost invariably follows the use of this anesthetic is very noticeable; patients walk away in a very comfortable state of mind and nerves.

PORCELAIN FACINGS FOR CROWN AND BRIDGE WORK

By Delos H. Carpenter, D. D. S., Minneapolis, Minn.

Having properly prepared your root fit Dowel pin or post as near the shape of the canal as possible, allowing it to extend a little beyond the root.

Now select a White or Davis detached post crown as near as possible the length desired, grind flat on the posterior surface until a little more than one-half of the post hole remains (Fig. 1), holding it at such an angle that the incisal edge will be ground down to a point. The grinding should be done by holding the facing on the flat side of a perfect stone. Place pin in position in root. With warm inlay wax press facing, which has previously been coated with vaseline, to place; chill and remove. Post should pull out in place; carve and polish. Remove facing, insert sprue and cast. Fig. 2.



Figs. 1, 2 and 3.

Fig. 3 shows completed crown. This method may be used for dummies and can if desired be cast in one piece, although I prefer soldering. This will not only give you a stronger facing, but more bulk of porcelain, consequently the color will not be impaired.

A METHOD OF TREPHINING AND INSERTING BAND WITHIN CIRCUMFERENCE OF ROOT IN DIFFERENT FORMS OF DOWEL CROWNS*

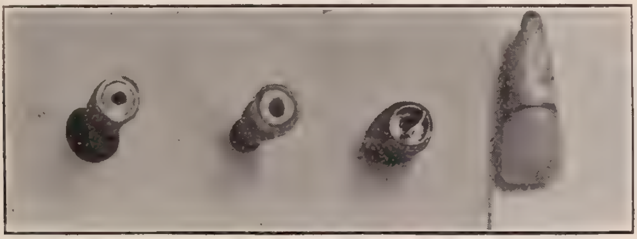
By S. N. Young, D. D. S , Cincinnati, Ohio

TO INSURE success in this class of work, of course, a thorough removal of the pulp of the tooth, or treatment of any septic condition of canal, and sealing of the apical foramen is essential.

The application of the trephine method to two simple classes of crowns only will be described, although the band can be applied in many other cases with advantage.

To apply the band in connection with ready-made porcelain crowns, the following procedure is simple:

Remove the crown of the tooth and reduce the end of the root with stones slightly beneath the gum line, open canal with a round burr of same diameter as trephine guide, select from set a trephine of gauge desired, and which will reach to point just within the circumference of the root, at point nearest to root canal, sink the trephine into end of root deep enough that the furrow will guide the blade later on; now enlarge canal and shape it as desired, then with stones or facers finish shaping surface of root to the point desired beneath the gum. Replace trephine in furrow and sink into end of root as deep as the band is desired to go in, about 1 mm. beneath root surface on labial, or buccal where resistance to stress is required. (See illustration.)



Figs. 1, 2, 3 and 4.

Now dry the end of the root and furrow, and having selected band of clasp-metal of same gauge as trephine, used, from supply of bands on hand and which has been previously adjusted over the model over which the trephine has been "trued," (see Figs 5 and 6), so that it will fit the furrow, same as the trephine does, cover the band with a quick-setting cement, press deep into the furrow, and hold for a few moments. When the cement has hardened sufficiently, remove surplus of band with stones, and the abutment is reinforced, ready for seating the crown. In an ordinary case with everything required, at hand, this entire operation will occupy from three to five minutes' time.

---

*Presented as a clinic at Ohio State Dental Society, 1909.

To apply in connection with plate and post crowns, prepare the root as above described. Select a band of clasp-metal or in this case 22k plate gold can be used, if desired, place in trephine furrow and hold firmly, with a strong sharp instrument, mark the band distinctly at root surface, entirely around the furrow. Remove band and trim to this line, then readjust the band over the brass model if necessary; now select a piece of plate gold of karat and size desired, and adapt lightly to end of root, place the band in proper position in this plate and attach with a minute piece of solder, observing that the band is united all around.

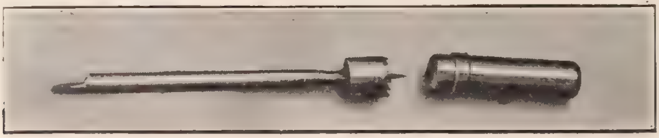


Fig. 5.

Place now the plate in position on root, hold firmly and with large foot plugger in automatic mallet, tap lightly around the circumference and mark outline of root upon under-surface of plate, remove and trim to outline. Perforate plate over canal for post, replace in position on root and force post into position, remove and solder post to plate with lower karat solder. Replace on root and go over again with foot-plugger to insure good adaptation to root surface.

A very artistic and substantial piece of work can be made by making this post and plate abutment, using Justi (or similar form) detachable post and allowing end to project beyond surface of plate far enough that detachable crown can be adapted to it. The crown can be adapted to this abutment quickly at same sitting, or bite and impression can be taken and crown selected and ground in subsequently, if preferred.

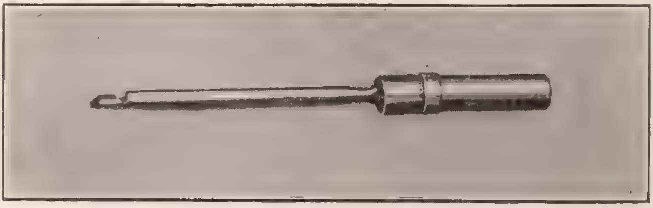


Fig. 6.

If pure gold has been used for the plate in this form, and a little fullness left in trimming, it can be burnished after the crown is set, thus protecting the cement in both crown and root.

Previous to setting the crown of the plate and post variety, a minute hole should be made in the band at its highest point, near the plate, to permit escape of excess cement.

CLAY PIPES AND GOLD INLAYS*

By C. S. Starkweather, D. D. S., Bellaire, Ohio.

1st. Procure from a dealer in smoking goods, a dozen common clay pipes, that retail for a penny each. You can obtain larger ones that are two or more inches across the bowl; these are used in large bridge castings.

2nd. Obtain some soft copper wire, about 14 gauge, wind one end five or six times about a pipe stem, near the middle, bend the remainder down at right angles for about four inches and fasten to a block of wood four inches square by one in thickness. You now have a device which holds the pipe bowl up and level.

3rd. Obtain a good bicycle foot-pump, one in which the valve at end of plunger can be removed and reversed or inverted, thereby making it a suction pump.

4th. Get three or four feet of small heavy tubing that will not easily collapse when suction is applied. Fasten one end of tubing to the pump in place of the usual short tube which accompanies the pump, wire or tie the tubing in place.

Slip the other end of rubber tube on the end of pipe stem and when you pull up on the pump plunger or handle you should get a strong suction, causing the pipe to stick to the palm of your hand, when held over the bowl.

I would advise you to fasten the pump underneath your workbench by two strips of tin or leather bent over the barrel and tacked underneath bench, have the handle in a convenient position to pull out when you are ready to cast. The rubber tubing should be brought up behind the bench and held with a staple where it is always handy to slip over a pipe stem. Mounted this way your Casting Machine takes up no valuable space, is always ready for action. Your outfit is now complete and there is no other that can give you more perfect results than this, when once you have learned how to use it.

The idea is to make a pipe serve as an investment ring or cup, also act as a casting machine, it being clay, stands the heat of drying out and melting of gold.

To invest the wax in pipe bowl, first place a little asbestos wool over the hole to prevent investment filling the stem of pipe, then place the pipe in water, this prevents it from drawing the water out of the investment. Mix investment and paint carefully over wax, fill the pipe bowl with investing material and place wax and sprue former into pipe, let it harden a few minutes when the sprue wire may be heated and removed. Cut a slight concavity about sprue to hold the melted gold, dry out slowly till all moisture and wax have burned out, place pipe in the wire holder, slip end of rubber tube over pipe-stem, see that pipe is level and handle of pump pushed in. Place a nugget of gold into concavity of investment, melt to a white heat, pull slowly out on pump handle and hold till gold cools, a cold instrument applied to excess of gold will hasten cooling. Your cast is now made, finish in usual way.

---

*Given as a clinic at Ohio State Dental Society, 1909.

Two or more inlays may be cast at the same time, a crown or two bridge dummies may be cast in an ordinary pipe, larger pipes for larger bridges.

For very rapid inlay work, the pipe bowl should be cut off with saw, about a third of its length, thus requiring less investment which can be dried out in twelve minutes ready to cast into.

I have used about all the machines made, and this is the best, simplest, smallest, most reliable casting device I have ever used regardless of price. Try it.

METHOD OF MAKING A PORCELAIN CROWN FIT PERFECTLY *

By F. B. Johnson, D. D. S., Cleveland, Ohio.

Method of securing a perfect fit to a Davis or other pinless crown, regardless of the shape of the end of the root, by casting a gold washer on an iridio platinum pin between root and crown.

After root is prepared and crown is selected, an iridio platinum pin is cut the proper length; inlay wax is attached to pin and the crown forced to place on the root with the wax between the root and crown. Trim off excess wax carefully; remove wax and pin together; invest and cast gold to pin. The crown is cemented to pin and after cement is hard the gold is trimmed and polished when it is ready to set.

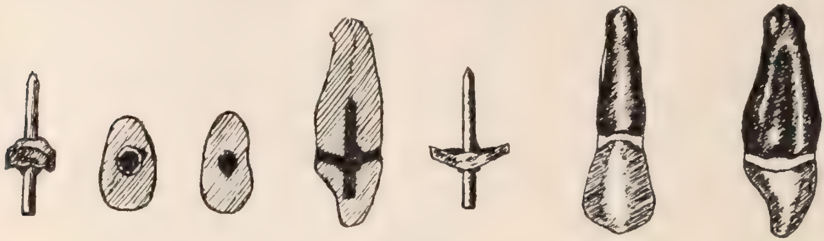


Fig. 1

HOLLOW GOLD INLAY FOR POSTERIOR TEETH. ATTACHMENT FOR BRIDGE WORK *

By George W. Emery, D. D. S., Newark, Ohio.

This inlay is made without any impression or any casting and we repair any old broken down posterior tooth that you could not fill with gold. This inlay holds the tooth instead of the tooth holding the inlay. You burnish in your matrix by wetting a piece of cotton, then burnish down the margins, take it out and trim these margins; put your matrix back in and reburnish it. Now, your matrix is in your tooth, take a little piece of 32 gauge pure gold plate of sufficient size to cover the cavity, place it over the cavity and have your patient bite, that gives you perfect articulation. Then burnish down the edges, take it out and trim the edges; put it back in the tooth; then take out the matrix and inlay together and tack it at the edge with a little piece of 18 karat solder; put it back in the tooth and give it a final burnishing. Take it out and cut a hole in the back of the matrix, put in your solder and solder it up; then put your inlay in the tooth and give it a final burnishing. Take it out and polish it and it is ready to set.

---

*Given as a clinic at Ohio State Dental Society, 1909.

ATTACHMENT FOR BRIDGE WORK.

This is a natural cuspid tooth. The tooth is prepared by making a groove similar to the Carmichael attachment. Then burnish on a piece of one thousandths gauge platinum. Use any ordinary burnisher to burnish the matrix into the groove. After you have burnished it, take it off and trim it to fit the tooth. Replace it and reburnish it; then fill the matrix with investment compound of any kind, or pumice stone, and let it set till hard. Turn the matrix over and flow on twenty karat solder. Put it on the tooth and treat it as a crown would be treated.

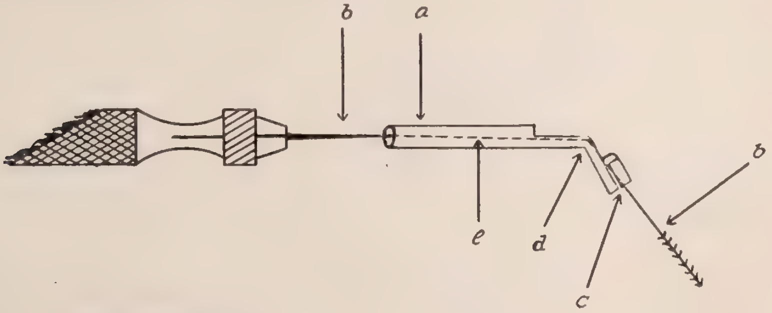
ATTACHMENT FOR NERVE BROACH TO BE USED IN MOLARS AND BICUSPIDS*

By N. H. Grove, D. D. S., Wyoming, Ohio.

This clinic consists of a demonstration of an attachment for the nerve broach that enables one to work with greater ease and facility in the root canals of bicuspids and molars.

The attachment is made from a piece of German silver regulating tubing cut and bent in such a manner (see illustration) so that when a broach is inserted it is bent at an obtuse angle and when placed in the canal can be rotated in either direction as easily as if it were straight.

The great advantage it has over using a short or cut off broach with the fingers in such locations is that by the aid of the mirror you can see just where to place the broach and at the same time preserve all the delicacy of touch required in such operations.



A—Broach attachment.
B—Broach.
C—Showing slit in tubing for insertion of broach.
D—Showing bend in tubing.
E—Dotted line showing position of broach in instrument.

---

*Given as a clinic at Ohio State Dental Society, 1909.

SURGICAL TREATMENT OF CHRONIC ABSCESSES*

By G. A. Billow, D. D. S., Dayton, Ohio.

When a chronic abscess arises showing a sinus, investigation is made, first, with a soft abscess probe. After the apex of the root has been sighted, a drop or two of a 1% solution of cocain is injected into the pocket, after which a small spoon excavator is used to scrape the infected root, and all the necrosed territory embraced by the pocket. After this has been thoroughly done and all the serumal deposits removed, a few drops of an aromatic sulphuric acid compound is introduced with a Dunn syringe and the case dismissed without further treatment for a week. If the sinus shows nothing further and if the root canal has been thoroughly treated and filled there will probably be no recurrence of the abscess.

The aromatic sulphuric acid compound mentioned above is as follows:

Aromatic Sulphuric Acid, ʒiii, and Tincture of Capsicum drops x, parts 70; Oil of Cinnamon, 10 parts; Formalin, 5 parts; Alcohol, 15 parts.

Sig.—Use full strength.

ACCURACY IN THE MANIPULATION OF INVESTING MATERIALS*

By S. D. Ruggles, D. D. S., Portsmouth, Ohio

The object of the clinic is to inculcate system in the mixing of investing materials. If certain proportions of liquid and powder are mixed for a certain sized flask, the same results will be produced each and every time. The plea is for system, not advertising especially any one formula. The size of the flask that is shown is simply for the measures that are shown. Each party will have to ascertain the materials needed to fill the flask which he is in the habit of using. I find that in four minutes after mixing of the materials that it becomes too hard to manipulate, thus allowing ample time for the investment of any ordinary model. Then in the course of ten minutes, should the case be needed at once, the flasks may be separated, the sprue removed and the case be ready to dry out. One feature, however, should be borne in mind and that is the materials used and the conditions observed should be the same all the time in order to produce the same results. In other words the idea is to have a little system about the work in hand, which does away with many mistakes and lessens the anxiety of the busy practitioner.

BACKING VULCANITE TEETH FOR BRIDGEWORK*

By George W. Emery, D. D. S., Newark, Ohio

Backing up vulcanite teeth for bridge work. Take a tooth that has been ground up ready for backing, and press it into vulcanite in the swager with side to be backed upward. Then we take a piece of any of

*Given as a clinic at Ohio State Dental Society, 1909.

the fibre golds (this is White's moss fibre), and lay it on the tooth. Now we take a piece of oiled paper and place over the tooth to keep the plunger from sticking to the backing. Then set the barrel of the swager over the tooth, and don't be afraid to strike it hard one stroke. Then remove the paper. Trim down the surplus gold from the backing and the tooth is ready to wax up and solder. I use the common base plate wax. The diatoric teeth are better and stronger than the pin teeth.

THE COPPER MATRIX*

By W. J. R. Akeroyd, D. D. S., Dresden, Ohio.

The object of this demonstration is to show the advantages of the copper matrix especially in inserting amalgam fillings. This matrix is one advocated by Dr. J. A. McLain, Demonstrator of Operative Dentistry, University of Pennsylvania.

Matrix is made of sheet copper of 35 or 36 gauge, thickness depending upon closeness of teeth. The copper is annealed and cut into desired shape.

Metal is then put around tooth and secured with dental floss. It is important to secure it well at cervix which can best be done at the beginning by a rolling hitch. One end is then passed around tooth one way and other end the other way and tied in a surgeon's knot followed by an ordinary knot.

This number of strands about the tooth is usually sufficient for an amalgam filling. For gold work it is better to increase the number of strands about the tooth.

The ligature may be prevented from slipping from tooth upon cervix by slipping the cervical edges at two places and turning out the portion between the cuts, this should be done on at least two sides.

Occlusal portion is then spun or stretched with a burnisher until natural contour of tooth is restored and until it comes in contact with adjacent tooth.

For amalgam work the matrix should not be so high as to prevent normal occlusion.

When amalgam is well packed the patient should be allowed to close down to get the occlusion, of course, remove the rubber clamp if it has been put on before getting occlusion. Allow matrix to remain until next sitting when it is removed and filling polished.

The advantage of copper matrix over others are:

First—Contour of tooth can be restored.

Second—Filling can be built up until in contact with adjacent teeth.

Third—Occlusion can be secured.

Fourth—Matrix may be allowed to remain on tooth until subsequent setting to prevent patients injuring the filling before it has thoroughly set.

---

*Given as a clinic at Ohio State Dental Society, 1909.

PARAFFIN ROOT CANAL FILLING*

By W. G. Hamm, D. D. S., Chillicothe, Ohio

Wherever a root canal filling is needed, I use this method with good success, and to a better advantage than chloropercha or other gums, pastes and resins used formerly. I use the formula given here in all canals:

Pure Paraffin, 1 oz.; Aristol or Iodoform, ½ dr.

The aristol or iodoform (I use both in separate jars) must be added while the paraffin is hot and in a liquid state, and keep it stirred until it is thoroughly incorporated in the paraffin; the reason for using aristol or iodoform is to get if possible the available iodine, a very good root preservative.

I fill the canals in the following manner: At the mouth of all root canals, either single or multiple, I use a round bur, No. 3 or 4, to make a countersunk pit over the entrance of the canal, I then clean out canals and cavity with pure alcohol (Ethyl) and dry same with hot air. Then place in this pit a small bit enough to your judgment to fill canal, then I use a Garhart Electric Needle so hot that it will melt paraffin with a touch (test it by a portion on the bracket) place the needle on the paraffin and push it slowly into the canal up to the apical foramen in order to seal it, and let it remain so for a second and in a rotary manner withdraw the needle. I usually place in the floor of the cavity cement to give a better filling base, then fill with the usual filling material. Whenever you cannot use, or have none to use, an electric needle, then use a broken annealed broach and a metal handle, keep it very hot and pump up the paraffin into the canal. With care it can be done as well as with the electric appliance, however, I prefer the electric needle for it distributes the heat more uniformly and flows the paraffin more satisfactorily.

Why I prefer to use paraffin as root filling. Because it has an ideal capillary flow in advance of heat, it is non-irritant, highly penetrable in osseous tissue and hermetically seals it to keep out all foreign matter, therefore if the canal and root is in a sterile condition, it keeps in the medicaments and keeps out the bacteria and moisture so essential in keeping the tooth from discoloration and your future success in keeping the tooth in a healthy condition, by that I mean free from periodical irritation and inflammation. I like it because it goes down in abrupt and constricted root canals better than anything that I have ever tried.

HOOKS AND CROOKS*

By Dr. W. M. Clawson, Cincinnati, Ohio.

The first instrument is a root canal dressing remover. It consists of a smooth broach with a little hook turned upon the end at right angles and cut off to about 1-64 of an inch in length or to suit the individual requirements. This inserted into a root canal rotated and removed brings with it the root canal dressing and a single flip of the instrument removes it from the broach or hook. This instrument also makes an excellent explorer being able to bend it at any curve or combination of curves, to reach any portion of a tooth and into interstices that would be inaccessible to any explorer on the market.

---

*Given as a clinic at Ohio State Dental Society, 1909.

THE SCIENTIFIC MOVEMENT OF A BROACH IN THE ROOT CANAL OF A POSTERIOR TOOTH:

The broach is inserted and held in such a manner that you may produce pressure upon the broach toward the apex of the root, but also holding in such a manner that the stem of the broach is free from all edges of the cavity and not allowed to rest against any edge during the rotation. In this manner the broach may be rotated at will, reducing danger of breaking at least fifty per cent, in removing the broach, slide the finger to the opening of the cavity and raise the broach with the finger at that point, thus avoiding any binding upon the edge of the cavity and making very easy and sure the removal of the broach.

SCHOENBECK'S SILICATE CEMENT WITH ANCHOR SCREW REINFORCEMENT *

By A. McAlpin, Bradford, Pa.

A patient presented, having both central incisors defective, undeveloped, about one-third of the cutting edge of the crowns lacking, perhaps the so-called Hutchinson teeth. The margins were trimmed, rubber dam applied and two anchor screws inserted in the cutting edge of each tooth. Around these screws the Schoenbeck's silicate cement was built, restoring the contact and greatly improving the young girl's appearance. The color was said by some who witnessed the operation to be a very close match to that of the tooth and to be indistinguishable at ordinary "speaking distance." Another patient had a distal buccal angle of a second inferior bicuspid restored. This also called forth favorable comment from a number who saw the operation.

---

*Given as a clinic before the Odontological Society of W. Pa., Oct., 1909.

EXTRACTION OF CUSPIDS *

By J. A. Coates, D. D. S., Cleveland, Ohio

My method of extracting upper cuspids, these being usually the last teeth to come out, and if lateral and bicuspids are present, I remove them, thus leaving the cuspid standing alone, and instead of grasping the root on its lingual and labial sides, I use a S. S. W. No. 10 bayonet forcep and grasp the root on the mesial and distal sides, they being slightly flat, and the process dips back, allows the leaks to slip high on the root, then grasp handles with both hands and rotate either way just enough to laxate the tooth, pressing upward while doing this and the root will come away clean, even if there is a decided curve at the apex, and requires simply a good grip in the hand doesn't break the process any, there is no shock.

---

*Given as a clinic at Ohio State Dental Society, 1909.

For broken down roots that can't be grasped with forceps I use a No. 11 S. S. W. gouge or spade which I have hollowed out on the flat side, making it concave, and this shape:

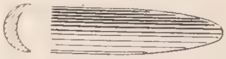


Fig. 1

this being small and then I am able to insert it between the root and process high up, then with a little twist or rotating, the root loosens, when you can pick it out; have taken out bad ones either upper or lower third molars, even partial impact also.

WAX DUMMIES.

By Dr. Ernest B. Hill, Marlinton, W. Va.

To make your wax dummies for cast bridge work, take any of the die-plates where you have the bicuspids and molars depressed, select the one or ones to suit your case. Then having the mould wet you can press the warm inlay wax to place, getting cusp and body; which can be trimmed to suit both the model and articulation, with but little trouble. Making each dummy separate you can articulate, and join together with a warm spatula to cast, or cast separate.

ABNORMALITIES OF THE SUPERIOR MAXILLA INFLUENCING MAL-OCCLUSION AND DISEASE OF ANTRUM AND TREATMENT*

By Dr. Edward. J. Bernstein, M. D., Kalamazoo, Mich.

(Concluded from page 239, April Summary)

PATHOLOGY

I shall not bother you much with the study of the pathological changes that take place in the mucous membrane of the antrum. The changes that occur are divided into the acute and chronic catarrhal and the acute and chronic suppurative and lastly, into the diphtheritic.

In the chronic forms the mucous membrane becomes thickened in all its layers so that often it is from 10 to 15 times as thick as normal. Then there are oedematous and hyperplastic forms. Now when new ulcerative processes are engrafted upon an old suppuration, the ulcerative process may lead to the formation of cysts and polyps.

In most cases of chronic suppuration in the antrum where scartissue has been formed you will find one or two cysts, generally miliary in form, they seldom reach the size of a hazel nut. Polyps in the antrum are exceedingly rare, yet I have had some in my experience. These polyps have either broad or sessile stems and are usually attached in the neighborhood of the natural openings.

SYMPTOMOLOGY

The subjective symptoms which accompany inflammation of the sinus are neither constant nor characteristic, so that from these symptoms alone no diagnosis could be made. The patients complain of pain which is not persistent, but like the pains of malaria, return in cycles, so that frequently they are incorrectly so diagnosed; this inconstancy, or, I should say, cyclical return of pain depends upon the filling and emptying more or less completely, of the sinus. While the seat of the pain is not a constant feature for each separate sinus, still the pain of chronic suppuration of the maxillary sinus is usually referred to the lateral portion of the frontal bone, i. e., over the eyebrows. Now, it must not be understood that every case of sinus infection (maxillary sinus, I mean) will refer the pain to this spot; nor, that if the pain is referred there it is unquestionably Highmore trouble, for the other sinuses when infected may also refer the pain to the same locality. As all the sinuses, except the frontal, are innervated by branches of the trigeminous nerve, it is easily comprehended that any branch of this nerve may reflect the pain to the area which it enervates. So that any portion supplied by the fifth (otherwise known as the trigeminous), may by reflex, apparently be the seat of the pain. Headache is the most common symptom of infection of the sinus, but this is not all; for the patient may complain of typical migraine with vomiting, vertigo, insomnia, disinclination for work, forgetfulness, aprosexia, that is, inability to concentrate the thoughts in any given channel for a protracted period. When the discharge of pus is profuse the constant swallowing of great quantities of pus may lead to disorders of digestion, to anemia. The desire to rid the throat of the crusts which accumulate there, may be so severe that we may thus account for morning vomiting. (You see thus that every case of morning vomiting does not mean pregnancy.) Even when the teeth are perfectly sound the infection may be so severe that these neighboring structures may be implicated and the patient complain of neuralgia in the alveolar process, and often enough, of infra and supra orbital neuralgia.

In disease of the antrum the patient may often complain that whenever they bend forward their nares fill up with pus, and indeed this is one of the diagnostic signs most frequently found, the one most frequently complained of and the one which leads most frequently to the detection of the source of the trouble. This, of course, when the natural openings in the middle meatus is open, but how about the condition when these openings are insufficient to drain the sinus, or are altogether closed?

Here you have the most constant and characteristic symptoms. The antrum then becomes rounded out, and in consequence, the thin inner or nasal wall is pushed out—so occluding the nasal respiration—and afterwards the facial wall also is pushed forward and the swelling is so seen. Should there be a thin area in the hard palate this will show, so that you may have a *lump formed in the roof of the mouth,* which may fluctuate on pressure.

Among the symptoms we must not forget those of subjective odors. The patient will complain that they are constantly annoyed by the odor of garlic or burning straw or other disagreeable odors. In women these subjective parosmias may be most annoying during the menstrual epoch. Disorders of the sense of taste of course follow in the train of these anosmias. Disturbances in vision also occur.

The *objective symptoms* are, mainly, pus in the inferior meatus of the nose, polyps in the nose, and the evidence of pus about the teeth.

DIAGNOSIS

With all this array of symptoms the diagnosis of antrum disease was until the past decade largely a matter of conjecture, but this has given way to almost positive identification in every suspected case. Above all, every case of *unilateral* flow of pus from the nose must compel us to think of sinus suppuration and most commonly we shall find it in the antrum, of highmore, which is by far the most frequently affected. It is needless to tell you that a most searching scrutiny of the molar teeth is essential, for this would be your first thought. When pus is found in the nose we must first clean out the nares thoroughly and after having the patient lean the head forward and in the direction opposite that from which the complaint issues. We thus assist gravity to enable the flow to pass out of the natural opening in the middle meatus and by carefully watching it may see it emerge therefrom; when this can be done then it is comparatively simple to locate the source. If one has a fistula emptying through the alveola we can follow it up very easily with a probe, and if it enters the antrum the riddle is easily solved. But given a case in which matters are not so readily determined, how shall we then proceed? For a long time it was recommended that we extract a carious tooth, if one could be found (I mean a carious premolar or molar tooth) and if such be not present then to extract the first molar, even though it be perfectly sound, and through this bore up into the antrum. If pus were found, then the diagnosis was established. This is still taught by many otherwise excellent surgeons, but I only wish to remind you of the many cases of anomalies in the size and position of the antrum to make you aware of the faults of such procedure.

Do not misunderstand me. I do not mean for one instant to tell you that all such procedures will result in failure, for too many cases have in the past been so diagnosed and so successfully treated. I wish also to warn you never to attempt to bore through an opening from which a tooth has been removed, the *roots of which are carious.* For if you have not already an infected antrum, your drill will most assuredly carry the infection there. Only when the caries reaches but to the neck of the tooth may you carry your drill up there at all with relative impunity.

The next diagnostic measure is that of transillumination. The patient is taken into a room perfectly darkened, or a hood, made of cloth so thick that it will not admit a ray of light from the outside to enter, is thrown over the patient and operator's head. Then a small one or two-candlepower electric lamp is placed in the mouth of the patient, who holds the stem between the teeth, firmly closing the lips so that no ray of light emerges therefrom, and the current is turned on. You will then see the face illuminated—just as are your fingers when you hold them up to some strong light. Now if there is no pus in the antrum the face will be equally illuminated on each side, and the reflex of light from the pupils of the eye will be equally bright, but if one antrum be affected, that side of the face will be marked out by a darkened area and the reflex of light will not be seen emanating from the pupil of the eye on that side. Were this always the fact then we should have a ready, painless and efficient diagnostic instrument at our command, but unfortunately, owing for one thing to the great variations in the density of the facial wall of the antrum and other conditions we can place very little dependence upon this transillumination; so that for the past eight or ten years I have almost entirely relegated this instrument to the shelf.

PROPERLY MADE X-RAY PHOTOGRAPHS GIVE US THE MOST RELIABLE HELP ASIDE FROM SURGICAL MEANS

There is, however, one means at our command which gives us, thus far, the least percentage of failures and, indeed, I might almost say is infallible. I refer to the exploratory incision through the inferior meatus of the nose. In by far the vast majority of cases it is painlessly done, and after thoroughly cleansing the nose with a mild detergent spray, or if that be not at hand, a nasal douche. I use one that is sold in the stores under the name W. T. & Co. nasal douche No. 10, which holds about two ounces of fluid. One-half oz. of Dobell's solution is put in this and then filled up with lukewarm water and the contents poured first through one side of the nose then the other till empty. After the nares are thus cleaned a small pledget of cotton is soaked in a 5 per cent. solution of (sterile cocain) and after this is repeated two or three times the place is quite anaethetized. Then with the trochar in the hand corresponding to the side of the patient to be operated on, i. e., left hand for the left side, etc., you place the point about an inch and a half back from the nares and with the point directed upwards and outwards you enter the antrum from under the inferior turbinated bone.

Withdrawing the needle and leaving the canula in situ you syringe through this canula the antrum with a warm sterile, very mildly alkaline solution (care lest too strong, etc.). After the first syringe full has passed out you will often get a full cast of the antrum in the washings, though one must not cease until at least a full pint of fluid has so been injected.

Often enough, one such washing will suffice to cure an old empyema. (Compare this method to the extraction of the tooth.)

PROGNOSIS

Though the majority of catarrhal inflammations of the sinus heal spontaneously such cannot be said of the chronic empyemata. The tendency is to remain all through life unless treated. As I have just told you one or at most two washings may cure an old purulent antrum trouble, but there are some which successfully defy our every means to become perfectly cured, but even these can be made perfectly comfortable through more or less radical treatment. As a rule from one month to two years may be necessary to eradicate all the trouble.

The treatment has been pretty well indicated while speaking of the diagnosis.

Ordinarily, simple cleansing with very mild lotions through the nose is enough. When this fails we must open the cavity either through the alveolar process, when a carious tooth has caused the empyema, or by the use of the Krause trocar, through the inferior meatus, and washing with the very mildest alkaline solutions. When these do not meet the indications we must do one of the radical operations. Either by what is known as the Caldwell-Luc operation, consisting of a large opening through the canine fossa and a corresponding breaking down of the medial wall (nasal) and packing with Bismuth gauze or filling with Bismuth paraffine. Many modifications of these operations have been devised, each having its advocates. For a better study of these, the reader is referred to the special books on the subject. Kilian, Hajek and Luc have each excellent treatises.

So eminent an oral surgeon as Dr. Cryer, to whom I am indebted for much of the pathological anatomy, says: "The treatment and surgical manipulation of disease in these regions will vary to as great an extent as the variations in the anatomy." The writer believed that it was through the communication between the frontal sinuses, the ethmoidal cells and the maxillary sinuses, that infection is generally conveyed to the antrum from the cells and the sinuses above it, recognizing at the same time that the posterior ethmoidal and sphenoidal sinuses and the cells of the orbital process of the palate bone can also infect the antrum by the resorption of the partition between these cavities. He also believes that there are more cases in which teeth are lost through diseases of the antrum, than cases in which the teeth are primarily diseased, causing infection of the antrum and associated cells.

DISCUSSION

Dr. F. E. Williams, Grand Rapids, Mich.: Dr. Bernstein's subject must be of like interest to all, inasmuch as it practically covers our whole field: Disease and development. Disease because we meet on a common plane to diagnose and combat. Development appeals more perhaps to the Orthodontist, in that we deal with it almost entirely in our work; also there is being more interest shown in the subject generally and more time given to it in the discussions, for to whom would it not appeal in obtaining near perfect structure. Development concerns us in all our operations and the ultimate outcome therefrom, as an emphasis of our diagnosis and treatment.

We quite naturally are consulted, first, from the standpoint of looks, though it is our least consideration from the outcome of our treatment, as it matters not (materially) what first brings the patients to our offices, so long as they arrive and receive the proper treatment in accordance with the diagnosed condition, and in this thorough method only may we expect perfect development. The placing of the teeth in normal occlusion renders mastication much easier, and in many cases possible only after the correction of the mal-occluding teeth; in this way preventing a diseased condition of the stomach and allowing the system to receive the proper amount of nourishment through normal digestion of the partaken food products.

With the subject under discussion dealing more properly with the high-arched palate, its cause and results, we have a phase of the subject wherein we see the worst effects of mouth breathing from an adenoid condition or any partial obstruction to the normal air passage through the nose, and in these cases it is impossible for us to give the patient complete and lasting correction, without the help of the Rhinologist, as it is likewise impossible for them to remove the cause and results without our help, and it means a complete correction with the help of both professions only—not only an attempt—or the best we can do; if it is not sufficient to give the required results.

The essayist mentions the removal of the adenoids or other obstruction at or about the first year of age. That is a very important point, and as he stated, will be at an age when there has been little time for bad effects due to the delayed condition (The high palate, deflected septum, etc.) Also mouth breathing which facilitates the lodgement of germs (Tuberculosis, Typhoid Fever, Diphtheria and any other disease, where the germs are breathed in through the mouth to find lodgement in the tonsils. Ingals makes the statement that more pulmonary tuberculosis are due to the entrance of the bacilli through the phryngel and foucial tonsils than to their invasion of the body by inhalation into the lungs, and that the tubercular bacillus penetrating the lymph glands in childhood lies dormant until the usual time for the appearance of phthisis, wasting away.

Adenoid vegetations may continue until they reach the Eustachian tubes causing deafness. If then the early removal of the obstruction eliminates so much of the results of delayed treatment, what a handicap to future development is removed. All or most of this trouble is impossible with the early removal of the nasal obstruction and the allowance of normal development, in which case we will find the absence of the narrow chest spoken of; if from that cause, also the adenoid features and expressions noticed from neglected treatment.

In our correction of these cases we can only place the teeth in normal articulation with the expansion of the upper and lower arches and expanding and lowering of the palate vault. Of course any change in the arches works a corresponding change in the face and facial expression, but the growth already taken place and the solidifying of the structures as age advances is a handicap to correction and normal development, besides lengthening the time required for treatment.

The essayist's quotation of Dr. Mosher, in his evidence of the delayed eruption of the central incisor teeth as causing or a cause of deflected septum, emphasizes an interesting feature of the deflected nasal septum. (I have with me a case which I will pass around, in which the delayed eruption of lateral as well as central upper incisors on the one side is very marked. On the side of the delay of eruption in this case there was but a small opening in the anterior naris and very difficult breathing on that side.)

Either the essayist is mistaken in his interpretation of Dr. Mosher, or they are both mistaken as regards the leaving in the arch the first teeth as long as possible for the benefit of the second teeth, or the early extraction of the first teeth. Our position in that regard, I believe, is easily set straight. We are very firm in denouncing the early extraction of the first teeth. If the early extraction helps any in the development of a straight septum, it also allows the second or permanent teeth to erupt too soon and before there is room for them or they are ready, and to a great extent arrests the development of the arches and constricts the palate; to the detriment of the breathing and normal growth of the naris and septa. These first teeth should not be extracted, nor should they be allowed to get in such condition as would indicate extraction. We want to keep them in the arch their normal length of time to serve their usefulness and to help develop the surrounding area; also to give the second teeth time for development and allow them to erupt normally in the acquired space. On the other hand, after the first teeth have remained in their normal length of time, if they are not removed by nature they should be extracted to make room for the erupting permanent teeth.

I believe the profession is with me in saying we are yet to be convinced that this method is not the best, not only, as to a normal articulation but a better general development.

The old-fashioned split plate, so mentioned, has served its day and no doubt done considerable good, but it would only spread the arch and stimulate new granulations at the palate suture or spread the same, but the roof of the palate would not be drawn down to a normal position as it is with our modern methods, and as the cross-sections I have here, seem to prove. (To substantiate my claim and as proof for the re-shaped palate I will pass around for your inspection a cross-section of the palate before and after correction; not simply showing a change in angle of the teeth but the entire palate as well.)

I can only present you with the proof of the change in the mouth, with the models, and not of the nasal fossa, but may we not suppose that portion is changed as well, for in corrected cases the entire form of the face is changed as well as the expression. This change after correction would coincide with the essayist's remarks about the sinking in of the face, which in this class of cases would be rather due to non-development, and that in turn due to early extraction of one or several of the first teeth, or a pronounced bunching of the teeth.

The nasal fossa in its ultimate bearing upon the entire structure, mentally and physically, by its ready prone to a pathological condition and its difficulty of treatment, particularly due to its irregularities in construction and its inaccessibility is of great interest to us all and will, I believe, bear considerable repetition in its discussion before the societies.

Dr. S. J. Lewis, Kalamazoo: I don't know when I have heard or read a paper on this subject that I have enjoyed more than this one. When Dr. Bernstein spoke to me the other day asking me to discuss his paper, I did not know how to answer him for the reason that I thought it hard to discuss from a dental standpoint. Furthermore, had it not been for the fact that my interests lie in taking up a science-medicine course, which I am now pursuing, I would not have undertaken it.

In the course of Dr. Bernstein's discourse he has brought out some exceedingly interesting points, and in my discussion of the same I am using mostly the words of authorities on this subject. I am very much pleased at the fact that the Rhinologist and the Dental Surgeon are working hand in hand to promote this work, and I think we have the Orthodontist to thank for it. He has given to us a scientific method of restoring normal conditions in the oral cavity so far as irregularities are concerned, and has not only done this but has also produced normal conditions in the nasal cavity. In this way he has attracted the attention of the Rhinologist who has given valuable assistance to him.

Dr. Bernstein speaks of irregularities being a result of nervous disorders in most cases. I hardly agree with him as a good many of them are inherited and a good many of them acquired. Most certain the nervous system has a great deal to do with irregularities produced by force of habit, but we might just as well say that every disease is the result of some disorder of the nervous system.

As to adenoids being the cause of so many gothic arches, I hardly think this is so, because most children who have adenoids, have normal or nearly normal arches. Dr. G.

V. I. Brown of Milwaukee says that it is caused more by septal disorders, which may or may not be caused by adenoids.

I do not know whether Dr. Bernstein means to say that every child or nearly every child who is permitted to live on with adenoid vegetation, becomes dull, stupid, nervous, etc., but if he does I can not see where he gets the basis of his theory. In years gone by there was no such adenoid operation and no doubt as many adenoids existed then as there do now. Now, we had just as many bright men and greater geniuses than we have now. Certainly some of these people were afflicted with adenoids or some other abnormal nasal growth. I know of a young man who is attending Kalamazoo College, who has a pronounced gothic arch with irregular teeth; has had adenoids, and he is one of the brightest students there.

True it is that the orthodontist should send his patient to the rhinologist for examination before attempting to regulate the teeth, but the abnormal growth should not always be removed there and then. Doing too much at once or taking out too much abnormal growth might result in a nervous breakdown.

We know as a fact, that if we open up the channels of the body that a normal condition is established, and if we open up the nasal chambers by enlarging the dental arch, why can't we establish a normal condition there. Certainly if we can establish normal breathing, abnormal growths cannot exist as Dr. G. V. I. Brown says in his article in the American Medical Journal.

That the dentist hesitates to extract teeth for a child is true, but he only lays stress on the teeth from the cuspids back. If too long retention of the temporary incisor teeth cause deflected septums and statistics show that very few deflected septums exist between the ages of 4 and 8, then the dentist will not hesitate to extract those offending members.

He also gives as a cause of deflected septums, the presence of persistent adenoid vegetation. Hardly a person is free from some deviation of the nasal septum, and if we have this condition where irregularities are present and where no traces of growths of any sort are found in the nose, I would like to have Dr. Bernstein tell us the cause for it. A good many of these cases are reported by Dr. Lee Wallace Dean of Iowa City, Iowa.

That the orthodontist widens the nasal arch as a matter of fact is not so and has been shown by Dr. Brown. He experimented with green skulls and not only enlarged the nasal floor, but produced a marked increase in the osseous walls. He also showed an increase in not only the lower meatus but the middle one as well. If this is so and we can enlarge the nasal fossa why can't we produce a normal septum by relieving the undue pressure on it. This opens up a new field for the orthodontist, and more success can be wrought in this way than by operation, as most septum operations are ineffective.

In reference to the maxillary sinus, no discussion is needed as Dr. Bernstein has covered the field in an excellent manner. He has given to us one of the finest methods of entering the antrum, and unless the dentist is well up on the various conditions that exist there, he should not touch these cases.

If the teeth are the cause of the trouble, they or it should be removed, but there should be a drainage made through the lower meatus as well, in some cases. I had an occasion to see a case of Dr. Bernstein's and I can say that I never saw as good a drainage as he had and by no means an ugly wound as I have seen in some mouths.

I want to thank Dr. Bernstein for the privilege of discussing his paper and also the members of this society for their ardent attention.

DR. DON M. GRAHAM, Detroit: I want to say that this is one of the best papers that I have ever had the pleasure of listening to, and I consider myself fortunate in being privileged to hear it. However, as we have a paper tomorrow much on the same line, I shall confine myself to a few words. There has always been a considerable disagreement between the rhinologist and the oral surgeon as to the etiology of empyema of the antrum, the rhinologist claiming as high as eighty-five per cent as being of nasal origin, while, with equal positiveness, we hear the oral surgeon stating that fully that percentage are caused from dental lesions. While these statements appear contradictory and apparently irreconcilable they will not seem quite so when we consider the conditions under which each specialist works. The oral surgeon is working for patients sent to him by the dentist who finds frequently a putrescent molar or bicuspid communicating with the antrum, or an area of necrosis extending into the antrum, and getting a great many of these cases it follows that he would naturally infer that a very large per cent of infected antra could be traced to oral or dental lesions. On the other hand, the physician finding deflected septa, enlarged turbinates, polypi. etc., would refer them to the rhinologist who finding maxillary empyema could be excused for supposing that a very large percentage were caused by such abnormalities. I believe it must be conceded that the majority of chronic purulent maxillary empyemas are of dental origin, while a very large number of acute cases are undoubtedly infected from contiguous nasal structures and never demand an operation but clear up spontaneously.

The choice of operation is always a question for discussion, and while the dentist or oral surgeon does not find the nasal route an easy one the rhinologist, for the same reason, will find the alveolar route a comparatively difficult operation. In the cases shown on the slides it would be more than likely that infection would not extend from the oral cavity but rather from some one of the accessory sinuses. In nearly all the cases that we have to deal with, the antrum is comparatively easily reached. In fact I have never had any difficulty and can gain access to it with less trouble, I sometimes think, than I can to many of the root canals which of course our rhinologists would also find difficulty in reaching. However, if an antral empyema be of nasal origin it would be malpractice to treat it through the oral cavity. If on the other hand it were of dental or oral origin, the result of a putrescent pulp or an alveolar necrosis, it surely would be worse than madness to treat through the middle or inferior meatus. In reference to drainage, I defy any person to get a better drainage through the inferior meatus than can be gotten through a properly performed alveolar operation. I think also that the danger from buccal infection has been magnified. With a proper dressing the danger is not so very great and at the same time we should not lose sight of the fact that infection is also present in the nose and that a large wound from this chamber would also present a danger.

A word in regard to Dr. White's paper. Naturally every specialist sees things through his particular glasses. An oculist, for example, attempts to cure all bodily ailments by the correction of refraction—and it is surprising how well he apparently succeeds while others attempt to cure the same ills by diet, by exercise, etc., and apparently accomplish the same results. If our orthodontic friends are going to attempt to restore our defectives to normal thinking and normal activity I think they are essaying too much. We must not forget the ever present factor of heredity and environment. Not long ago some person advanced the theory that idiocy was the result of lack of expansion of the cranial bones. To test the theory, one or two subjects were taken and operations were performed which permitted of abundant expansion but the grey matter refused to respond and the fallacy of the contention was soon established. We have seen time and time again these poor perverts, with receding chins and narrow brows, these bullet heads and mouth-breathers, come to our clinics for treatment to no avail for they are victims of heredity and environment. In the normal child, the removal of adenoids and orthodontic corrections will accomplish wonders, but with the congenitally defective the prospects are not very encouraging.

DR. GEO. ZEDERBAUM, Charlotte: I also was very glad to hear Dr. Bernstein's exhaustive paper, for it was a very instructive one indeed. During my few years of practice I had the pleasure to operate on and treat several antral empyemas. One case in particular was a peculiar one being a bilateral antral empyema simultaneously. In some points I am obliged to disagree with Dr. Bernstein. I always had been taught to drain any cavity containing pus at the most dependant point (lower putrescent teeth excepted), and for this reason I do not see why it is necessary to reach the antrum by way of the interior meatus every time and especially when we are positive that some tooth or teeth were the original factors. My point can be readily seen from the following true story told on the Prince of Wales who had been suffering with empyema of the antrum to exasperation. In those days X-Ray examinations to determine the cause of trouble and the extent of area involved were not known, so a dentist was called. He examined the molar and treated the tooth and the antrum through it without satisfactory results, the opening being too small to drain successfully. Then a rhinologist was called and operated on the case as Dr. Bernstein suggests, through the inferior meatus and after considerable treating, but still without recuperation, he was dismissed. Prince of Wales, wild with pain, finally called in a passer-by and showed him his lamentable condition and offered a vast sum to anyone curing him. The sage consulted ordered the Prince to be stood on his head in a corner of the room, and, this being done, the lower part of the antrum, the floor of which was below the opening made by the rhinologist in inferior meatus, and was not drained out completely, was evacuated successfully of the residual contents, in this odd manner, and the case cured without further intervention.

Dr. R. W. Bunting, Ann Arbor: I am glad to hear this paper tonight, and was very much interested in it. The question has been in my mind as to the proper method of getting into the antrum. I do not think we should always go into the antrum through the mouth nor always through the nasal fossae. For instance, if we have an upper first or second molar with an abscess we find occasionally that there is a considerable necrosis which necrosis may extend into the antrum. Now by the time we have removed the necrosis on the floor of that antrum we have considerable of a hole, and through that hole we can cure that; however, there are cases that we cannot. I want to cite one case that it was my misfortune to see when I was in college. A young man came into the clinic with a case of antrum trouble which had been treated in a homeopathic hospital. He had had considerable of the floor of the antrum chiseled out, and the case failed. However, they claim that there was a continuous catarrhal discharge which would necessitate a considerable opening being left. Some one had made for him a silver plug which fitted up into the hole to keep it open, and then over that was a silver plate which took the place of two teeth and was stretched by means of small wires to the remaining teeth, anterior and posterior. From this you can imagine something of how foul that man's mouth was. Now they said there that this hole must be kept open, that there should be a plug made more sanitary. I had the misfortune and pleasure to make that plug. It was about like the end of your thumb, to fit up into the hole. This plug was soldered, and then heavy telescope crowns were put on the teeth adjacent, and put on as sanitary as we could. But think of wearing that contrivance all the rest of your natural life. I would not want it, and I was mighty sorry to see that fellow go out. How much better it would have been, if it were necessary to keep that open, if he could have had that continuous opening in his nose, where it could have been blown out on his handkerchief, if he had one, and healed the mouth over.

Dr. A. E. Masselink: I was going to say I had a case not long ago of antrum trouble. The patient was advised to come back in three or four days and have the operation finished. It came in three or four weeks, and by that time the whole antrum was infected. I treated the case a long time: that case is still uncured. It is exceedingly difficult to cure sinus trouble. I took the case on the advice of a physician. I would not advise a dentist to do much of that work unless he makes a specialty of it and knows how hard it is.

Dr. L. P. Hall, Ann Arbor: Some cases were referred to us from the hospital and we were requested to make openings through the buccal cavity and make drainage tubes for them, silver, gold and other metal. We found a great deal of difficulty in that. We would make good sized tubes and they would invariably fill up with hypertrophic tissue, and we never considered them successful at all. I think almost invariably now they let it drain through the nasal cavity, and it seems to me that they can wash out their appliances better in that way. Of course, if we have a tooth that is extracted and a portion of the floor of the anturm is removed with it, and if the opening is not too large and it has not too much irritation there it may be all right, but for my part I would not open them from the oral cavity if I could possibly avoid it.

Dr. R. Lanfhear: I had a case a short time ago, a peculiar case. Dr. Bernstein's paper states how the old tissue comes around and what a change there is in the reabsorption.

A young man came into my office, 21 years of age, with a history of alveolar abscess of the right lateral side, back about 2 c. m. and a half and then it enlarged. This was opened, scraped out, this abscess cleared, and the palate bone to the first molar and distals and the antrum was back of that.

There was another case I want to speak of, speaking of high arches, in which it was an inch of tissue below the floor of the antrum. Another case a doctor came over there with in which an antrum came about as far forward as the first bicuspid; and we had a case over there a short time ago in which they operated through the nose in Dr. Bernstein's method, and as far as we could go was the second bicuspid, which shows that the antrum does not go as far forward as the dentists think.

Dr. O. W. White: In response to what Dr. Graham remarked, in regard to specialists getting enthusiastic on their part of the work in different lines—heredity, indeed, plays a great part, but I have seen bad cases of mal-occlusion at the age of two years. I know that if I see a child two years of age I can prevent mal-occlusion developing in that mouth, I do not care who the parents were. I believe that the children will not inherit predisposition for nasal obstruction but will not inherit a small lower jaw and large upper jaw. Nasal obstruction develops after birth. They may inherit a predisposition for nasal disturbance but they will not inherit mal-occlusion, and we can prevent that. How much inheritance has to do with the bone development and shape of the teeth, it is very hard to say, but I do not believe that the child inherits the small and the jawge jaw. You will find cases where you have supernumerary teeth and will find free teeth, but they are very rare and the percentage is very small, and I doubt if you have seen a half dozen cases of mal-occlusion at the age of two years in children. You will find that teeth will erupt in normal occlusion at that age, and it is a very, very small percentage that have mal-occlusion at that age.

Dr. Graham: That would not speak against heredity for all that.

Dr. White: Yes, if the child inherited a certain shape jaw, but you spoke in regard to those cases of nasal obstruction that have existed for years. The child did not inherit that obstruction; they developed this nasal obstruction, which produced mouth-breathing, and then you have an abnormal growth of the jaw.

Dr. Graham: Do you inherit a receding brow?

Dr. White: You inherit a certain type of head, as a certain normal chin, a certain normal arch, but you will have normal occlusion in that head. There is a certain normal arch for that head, but I do not believe you can blame heredity for the case. You will have this round face, but that has a normal arch, and you will find normal occlusion in that case. I just mentioned two years, Doctor, because at that age you will find, usually normal occlusion. Mal-occlusion usually develops at that age.

Dr. Bernstein (Closing discussion): I have not entered at all into the treatment of maxillary sinus trouble on account of lateness of the hour but my paper will show the treatment also. Nasal surgeons do not magnify the difficulty of getting into the antrum. We can get into the antrum as readily as you can. The point is not the ease with which you can get into the antrum, but to find the cause of the antrum trouble and determine the proper operation. If you find it in the nose, it is folly to attack the mouth; if you find it in the mouth, it is folly to attack the nose; but the investigations of men like Cryer of Philadelphia, Fletcher of Cincinnati, Talbot of Chicago, men who are orthodondists certainly are not biased. If they were biased, they would be biased in favor of the mouth being the seat of the disorders, but the testimony of these men, as I read it, is in line distinctly with that of the most advanced rhinologists—that is, in a large majority of the cases the maxillary antrum trouble originates in the nose. A certain small percentage, about 11 to 14 per cent do originate from caries of the teeth. Now it is not, that you see cases more often from one cause, and I more often from another, but the cases have been analyzed by men of a very judicial, unbiased mind, and their decision is in line with one another. I do not think we differ so much from one another. No one denies, for instance, that caries may cause sinus trouble. I want to say further that diseases of the maxillary antrum have been shown, by a great number of men, notably Cryer, to be due to caries of teeth, in a *very small* percentage of cases. Formerly the assumption was that maxillary antrum suppuration was almost invariably due to caries of the teeth. We now know that various exanthemata—grippe, measles, typhoid fever, scarlet fever—largely affect the maxillary antrum. If you find a maxillary sinus with a great alveolar process and the trouble originating in the frontal sinus, what in the name of common sense is the use of opening anywhere but the most important point, and attacking it from the frontal sinus? The methods of opening the antrum, there are many ways. The question is to locate the proper method for the proper case. I do not treat two cases of maxillary antrum, possibly, alike. If I find the maxillary antrum by means of my X-Ray to be divided by a septum and the frontal sinus and ethmoidal sinus perfectly normal, what in the name of common sense is the use of attacking the ethmoidal sinus. We know that we take backward children, and I do not mean to say that every backward child has adenoids, or that every backward child has mal-occlusion or eye-strain, but we are physicians and we should seek every possible cause which might influence this. Dullness, listlessness is due to interference with the proper lymphatic circulation in the lymphatics of the meninges by reason of hypertrophic growth interfering with cerebral circulation; if it is eye-strain in one case, correct that; if mal-occlusion, correct that, because we know that if the child does not masticate properly he cannot receive proper nourishment and cannot get on; if it has adenoids, remove them. Where you find adenoids which are the fault of backward children, removing the adenoids cures them, there is no doubt about that, and we do know also that there have been adenoids in children long before we have done adenoid operations, but we recognize that great harm was done to their hearing, their breathing, their chewing, etc., and we hope to end these difficulties in the rising generation. I have operated on children in the families of some of the men who are criticising this operation and they know what great benefits come. It is well to know that we operate for adenoids even in infants, but you should know that we do not attempt thorough removal before the third year, as the adenoids are necessary then for the proper functioning of the eustachian tube in the very young: where anatomical reasons influence this course.

SOME PRINCIPLES OF RETENTION IN ORTHODONTIA

By Martin Dewey, M. D., D. D. S., Kansas City, Mo.

(Concluded from page 141 *February Summary.)*

RETENTION OF CLASS II AND III CASES.

In dealing with the retention of class II and III cases I will confine my statements to the general principles involved, and those principles will be based on the general tooth movements and changes which take place in the bone and surrounding parts.

In the treatment of these cases the general demands are the correction of the mesio-distal relations of the arches. The treatment which the anterior teeth will receive depends on whether the case is Div. I or II, of Class II or Class III.

The many plans of retention that have been suggested in times past prove to me that the changes, which were to be expected in the correction of these cases, were not clearly understood. Our retention depends upon the kind of movement that is to be obtained. If the change of the relations of the teeth and jaws is to be brought about by producing some change in the temporo-maxillary articulation as suggested by some, the plan of retention would have to be different from that used in a case where the mesio-distal relations of the jaws were changes as the result of changes in the alveolar process.

This then brings us to the consideration of what movements we must consider in the retention of cases. Is there a change in the temporo-maxillary region? Is the angle of the mandible changed or is the bone rebuilt to accomodate the changed relation of the teeth and the forces of occlusion? After making dissection on man and mammals and studying the development of the temporo-maxillary articulation, I am convinced that no change takes place in that region. Also, in the study of sections made from mandibles, from photos of patients, and observation made on my patients, I am satisfied that there is no bending in the angle of the mandible. The change that does occur and the one that we must bring about is the rebuilding of the mandible and maxillae to support the teeth in their new position of occlusion.

In the retention of Class II Div. 1, we are called upon to retain a case, which has been primarily caused by a diversion of the forces of occlusion. Our success in retention then depends upon our ability to enlist the natural forces of retention, and mechanical retainers should be only a means toward that end. Taking the conditions somewhat as they present themselves, are the protrusion of the superior anterior teeth, narrow upper arch. The protrusion of teeth depend, to a great extent, upon the narrowness of the arch and both upon the abnormal muscular and atmospheric pressure.

In the treatment of the upper arch, we have widened it to the proper width as demanded by this particular case; the anterior teeth have been retracted. As the greatest amount of expansion has taken place in the canines and first premolars, it is here that we must bend our greatest efforts in retaining the proper width. If the anterior teeth are prevented from again protruding, the canines cannot resume their old position. So, by noting the backward tendencies of these canines and incisors and pitting one against the other we will diminish the bulk of our retainers. In other words, by utilizing compound reciprocal retention on the eight anterior teeth, we need place no other retainer upon the upper arch. Bands placed on the canines with a wire attached on the mesio-labial corner of each band engaging the labial surface of the incisors, the six teeth are firmly retained. A spur then soldered to the disto lingual corner of the band to engage the premolar, we have the expansion taken care of.

No retainer is used to maintain expansion in the molar region because there will be little danger of the molars taking the old position of malocclusion if the arch has been expanded by moving each lateral half, bodily. By that I mean the teeth of each lateral half were moved at one time, so as to avoid as little disturbance to the peridental membrane as possible, depending upon the greatest amount of change taking place by a springing of the alveolar plate. As the canines have been moved the greatest distance, we would naturally expect them to show the greatest tendency to return.

The tendency of backward movement is prevented by the retainer I have described, which also may need a word of explanation, as to why the wire is placed anterior to the teeth. Efficiency and simplicity is the answer. That it is more conspicuous, there is no doubt, but I have no time to argue with those who will sacrifice efficiency in order to make an appliance less conspicuous. One of the first rules of retention is to antagonize the backward tendency of the teeth only and the appliance I have described does that better than anything else that may be used.

The lower anterior teeth are retained by compound reciprocal retention, very much the same as Class I cases are handled. As the tongue has been held in the lower part of the oral cavity, very little, if any expansion is needed of the lower molars. Therefore, as the lower molars have generally been moved only in a mesial direction, we can limit our retention to the backward tendency from that direction. Active intermaxillary retention as described in the previous article is used. In these cases the lower molars have the appearance of being in infraocclusion, and the forward and upward pull of the rubber ligatures tend to elongate the molars; which does two things that are of importance in the establishment of the natural forces of retention.

First, as the molars are elongated, the excessive stress on the anterior teeth is relieved.

Second, the lower molars being elongated, they occlude with the upper molars and overcome any tendency which those teeth may have to assume the old position of lingual occlusion. This fact also has been responsible for the discarding of a retaining appliance to maintain expansion of the upper molars.

In Div. II, Class II, we have the same question to deal with in retention, except there is never as much expansion in the upper arch distal to the canines as in Div. 1, and the anterior teeth are expanded, instead of retracted.

Therefore, compound reciprocal retention is used as the case may demand, remembering to so place bands and spurs that they will conform to laws laid down in the former articles.

Mesio-distal relations are retained by active intermaxillary retention as described before.

The retention of the Subdivision of both divisions is the same as the divisions, only varied to meet the individual cases.

CLASS III.

As regards the retention of Class III very little need be said, for the same laws and principles hold true in it as does in Class I and II.

The application of Active Intermaxillary retention is used so as to obtain the continuous stimulation of the cells and thereby get a more rapid building of the parts.

In a large number of Class III cases there seems to be a super-occlusion of the molars. Therefore the active intermaxillary ligatures must be so applied that there will be no tendency to elongate the superior molars.

To avoid the elongation the spurs on the bands which have been placed on the upper molars are extended downward so that the rubber when placed on the lower canine spur will pull parallel to the line of occlusion.

In those cases of Class III where the lower arch has been as wide or wider than it need have been and the upper arch has been expanded, the spur which holds the intermaxillary ligature can be made long enough to engage the buccal surface of the lower molar and thereby perform two services, viz., that of active intermaxillary retention and retain the buccal expansion of the upper molars.

As the anterior teeth may occupy various positions so will the compound reciprocal retaining appliance demand modification to meet those conditions. In all instances remember that the approximal contact point must be carefully considered to avoid future trouble.

After everything has been done in a mechanical way, the retention is bound to fail, if you have not worked along the natural lines and established the natural forces of retention. Therefore let me say, study your case and do nothing until you have outlined the causes of effect of each appliance and force.

Finis.

REPORT OF COMMITTEE ON LITERATURE *

YOUR COMMITTEE appointed for the purpose of reporting on the dental literature of the past twelve months assigned certain subjects to each of the members of the committee, who were to make their several reports on said subjects. To the speaker were assigned the subjects of Oral Hygiene, Ethics, History, Education, Dental Economics and Porcelain work. I beg leave to report as follows:

ORAL HYGIENE.

An article by Richard Grady, M. D., D. D. S., entitled "Inaugurating Dental Inspection in Schools," is worthy of your attention. Dr. Grady has done as much as any other person to keep this subject before the profession. There are some ideas in the paper which it would be well for this society to carry out. Published in the *Dental Cosmos*, Nov., 1908.

---

*Read before the Odontological Society of Western Pennsylvania, October, 1909.

"Interstitial Gingivitis" by Dr. E. C. Briggs. An abstract to be found in the Nov. 1908 *Cosmos*. Dr. Briggs is an authority on this subject and his papers are always instructive.

I wish to call your especial attention to the report of the Committee on Scientific Research, New York State Dental Society, L. M. Waugh, D. D. S., Chairman, and to the Correspondent's report on the subject of Normal and Abnormal Conditions Existing in the Saliva, by H. C. Ferris, D. D. S., *Dental Cosmos*, Dec., 1908.

An abstract especially good on "light" entitled "Hygienic Hints for Dental Practice," by Dr. Blickle, from Pawelz' Zahntechnische Reform, in the *Dental Cosmos*, Dec. 1908.

"Importance of Dentistry in Preventive Hygiene" by Mr. Horace Fletcher, in the Feb. 1909 *Cosmos*. You have all heard of "Fletcherism" and should read this article in order to appreciate your calling.

Editorial in the *Cosmos*, April, 1909, entitled "Dentistry and Tuberculosis." Such articles as this are important in teaching the public the importance of dental services. We should familiarize ourselves with them in order to talk intelligently to our patients.

"Salivary Analysis." Report of Committee on Scientific Research, National Dental Association, Dr. H. C. Ferris, Chairman, Sept. 1909 *Cosmos*. A subject of great importance because of its relation to susceptibility and immunity to caries.

"The Dental Inspection of Public School Children," an editorial *Cosmos*, Oct., 1909.

"Bismuth Paste in the Treatment of Pyorrhea Alveolaris and Sinuses of the Jaw," Dr. Rudolph Beck. *Dental Review* Jan., 1909. Dr. Beck presents a new method of treatment which has been found beneficial by many operators.

An excellent article on "The Supreme Importance of Oral Hygiene" by Dr. H. Everton Husley, is to be found in the *Dental Review* for Feb., 1909. It states that this subject will eventually place dentistry as a leading branch of the healing art.

"Compressed Air in Dental Practice." A. W. Harlan, M. D., D. D. S. *Dental Review*, Jan., 1909. A short but instructive article.

"Would the Medical Degree Add to the Professional and Social Standing of the Dentist?" by Dr. Edwin T. Darby, M. D., D. D. S. *Cosmos*, May, 1909. Dr. Darby says "At the present time the Dental Schools of America embrace in their curricula about all that is necessary for the dentist to know to practice successfully his profession. If, however, the student or practitioner wishes to dig deeper into the sciences the whole field is open to him. Again, it is questionable whether the medically educated dentist would command greater respect or professional standing with the medical practitioner or the public at large because he held the medical degree."

"The use of Tartar Solvent in the Treatment of Pyorrhea Alveolaris," by Dr. Joseph Head. *Items of Interest,* March, 1909.

"A Discussion of Several Misnamed Conditions of the Mouth," by J. H. Crawford, D. D. S., a member of our society, published in the Oct. 1909 SUMMARY will be of interest to all our members.

A paper by another member of our society, Dr. J. F. Biddle, on "A Plea for Dental Education and Examination in Our Public Schools," published in the *Dental Digest* for May, 1909, and which was read at one of our meetings, is an excellent paper on the subject and should be studied by our members with a view of introducing some of the ideas into our society work.

EDUCATION

"Anthropology and Dentistry." A. H. Thompson, D. D. S., Oct. 1908 *Cosmos.* Dr. Thompson has made considerable study of the subject of anthropology and gives an excellent paper on its relation to education and technical training.

"How Can We Improve Our Nomenclature?" S. H. Guilford, A. M., Ph. D., D. D. S., Oct. 1908 *Cosmos.* Dr. Guliford has been on national committees on nomenclature for years, and gives a short history of attempts at improvement and illustrations of erroneous nomenclature.

Report of Committee on Reorganization of the Pennsylvania State Dental Society, by J. T. Lippincott, D. D. S., Nov. 1908 *Cosmos.*

"More Efficient Society Organization," by Arthur D. Black, B. S., M. D., D. D. S.

The last two items are of interest to the members of this society.

"Post Graduate Study." Arthur D. Black, B. S., M. D., D. D. S. A statement of the progress of this work in the Illinois societies. March 1909 *Dental Review.*

PORCELAIN WORK.

"What About Porcelain?" Dr. W. T. Reeves, March 1909 *Dental Review.* A statement of the position porcelain should hold as a filling material and a criticism of those who have given up its use.

"The Status of Porcelain Inlays." Dr. John Q. Byram. *Dental Review,* April, 1909. A very conservative statement of the status of porcelain inlays.

Reviews of "Principles and Practice of Filling Teeth With Porcelain," by J. Q. Byram, D. D. S., are to be found in all the journals for either October or November, 1908.

September 1909 *Dental Review* gives report of the Post-Graduate committee of Illinois State Society upon Gold and Porcelain Inlays.

A series of articles on porcelain and gold inlays began in the January 1909 DENTAL SUMMARY. There have been numerous articles in the various magazines on porcelain work during the year but for lack of time for selection they are not included in the report.

HISTORY.

A Sketch of the History of Dentistry. Charles McManus, D. D. S., June 1909 *Dental Review*. Dr. McManus is as well posted on the history of dentistry as any other person and his article is very interesting.

During the year Guerini's History of Dentistry was published, probably the most comprehensive work on the subject ever written.

DENTAL ECONOMICS.

"A little of the Business Side of Dentistry." By E. R. Bucks, D. D. S., and "Business Side of Dentistry," by E. R. Kibler, D. D. S., in the October 1909 Dental Summary may be of interest. There has been very little published during the year which we consider of any special note on the subject of dental economics.

ETHICS.

Probably the most notable event in relation to ethics which has taken place in the last year was the adoption of a new code of ethics by the Illinois State Dental Society, at its meeting in Danville, May 11th, 1909, a copy of which may be found in an editorial in the *Dental Review*, June, 1909. The writer says, "The old code has done great good to the profession and there is nothing but respect for its teachings, but it was felt that some of its provisions should be made more specific and that there should be some additions made to its restrictions."

In the August number of the *Dental Review* are several articles on ethics and commissions. Also an editorial on Quacks and Quackery.

W. L. Fickes.

PROSTHETIC DENTISTRY.

There is a well-written article entitled "Some Phases of Prosthetic Procedure," by J. H. Prothero, D. D. S., of the Northwestern Dental School in the November *Dental Review*. It is principally historical in character.

"Some Considerations Concerning Accuracy in Taking the Bite," is the title of an article in the *Dental Brief* for October, 1908, by Dr. Chas. R. Turner. Dr. Turner is an authority on prosthetic dentistry and this article is well worth reading.

Another article by Dr. Turner is to be found in the March *Dental Cosmos*, 1909, on "Some Considerations Concerning the Forms of Artificial Teeth."

A third article by the same author, "The Restoration of Facial Expression in Dental Prosthesis," is to be found in the August 1909 *Cosmos*.

"A Plea For More Scientific and Esthetic Forms of Artificial Teeth," by J. Leon Williams, D. D. S., L. D. S., in the December 1908 *Cosmos* advocates a new system of molds with which a more perfect occlusion may be obtained with less labor than is now necessary and more closely modeled after the natural teeth, etc.

"The Principles of Retention of Artificial Dentures," by Geo. H. Wilson, D. D. S., in the August 1909 *Cosmos* is a very instructive article written in Dr. Wilson's lucid style.

"All Aluminum Cast Plates," by Frank H. Kelly, Ph. D., D. D. S., in the August 1909 *Cosmos* is a very good article.

"Metal Plates," by Dr. L. P. Haskell, is in the March 1909 *Cosmos.* Dr. Haskell's long experience in dentistry entitles his articles to our close attention.

ORTHODONTIA.

There are several excellent articles in the *Dental Cosmos* for December, 1908, on the subject of Orthodontia, one of which is notable, viz.: "Is Your Child's Face Beautiful," by Henry C. Ferris, D. D. S.

"Habitual Mouth-Breathing and Consequent Mal-occlusion of the Teeth," is the subject of a good article by G. F. DeLong, D. D. S., in the February, 1909, *Cosmos.*

"Early Treatment of Mal-occlusion of the Teeth," by J. Lowe Young, D. D. S., in the April 1909 *Cosmos* contains information every dentist should know.

"Fixed Appliances in Orthodontia," by Shirley W. Bowles, D. D. S., in the April 1909 *Cosmos.* The reputation of the writer indicates the worth of this article.

"Mouth Breathing; Its Influence on the Development of the Dental Arches and Jaws," by Dr. M. N. Federspiel, is in the *Dental Review* for December, 1908. This is an excellent article, pointing out the injury resulting from mouth breathing, usually due to nasal obstruction.

"Pin Hole Photography for Dental Appliances or Cases," by Dr. W. A. Heckard, contains useful information. *The Dental Review,* Sept., 1909.

"Early Treatment in the Correction of Mal-occlusion of the Teeth," in the Sept. 1908 *Items of Interest,* by D. Willard Flint, D. D. S., a member of our society, is an excellent paper accompanied by a comprehensive discussion.

"The Scope of Modern Orthodontia," by William J. Brady, D. D. S., in the October *Dental Brief* gives a good idea of the advance in methods and the increased importance of orthodontia.

There are many good articles on both prosthesis and orthodontia in the various dental journals, but time will not permit a more extended review.

W. A. McCready.

CROWN AND BRIDGE-WORK.

Conspicuous among those gleaming, glittering, cruel things which have held high precedence in the golden age of dentistry, and from which progressive practice has receded to such extent that conservatism permits their use occasionally, instead of demanding it generally, *is the banded crown.* This is the introduction of Dr. J. H. Crossland's paper, a very interesting article in the November *Dental Cosmos,* 1908. In the same number of the

Cosmos Dr. Fred A. Peeso discusses Conservatism as an Ideal in Bridge-work. Crown and bridge-work is a comparatively new addition to our professional activities. It is barely thirty years since it first demanded serious consideration, and for many years following it was frowned upon by the better members of the profession. Unfortunately, says he, at the beginning a large number of unprincipled practitioners saw in it a new source of revenue which they proceeded to utilize, placing bridge work any where and every where, the only restriction to their operations being the inability of the patient to pay. Read this article if you have not already done so.

Dr. H. Herbert Johnson in August *Cosmos*, 1909, has written on Observations on Crown and Bridge Work. This article is worthy of consideration, as it contains several good points.

September *Cosmos*, 1909 . Crowns Critically Considered and Compared with other Operations, by Dr. Allan G. Bennett, contains some thoughts worthy of your attention and also a criticism of Dr. Crossland and Dr. Richard L. Simpson's articles. Look them up and read them, they are interesting and edifying.

Dr. Weston A. Price has an article in the May DENTAL SUMMARY on The Correction of Occlusion, Articulation and Facial Expression by Lengthening the Bite, by Means of Crowns, Bridges and Inlays. He handles the subject well.

The *Dentist's Magazine* of November, 1908, contains an article of Dr. Hart J. Goslee, entitled, Unsolved Problems in Bridge Work.

1st. Should the pulps in teeth which are to support artificial crowns be devitalized as a procedure incident to the preparation of such teeth, or not?

2nd. Should a crown be made with a band, or without?

3rd. Should a band, when one is used, extend beneath the gum margin, or not?

4th. Should we destroy or mutilate the beautiful crown of a sound tooth for the purpose of obtaining support for a bridge, or not?

5th. If this is not warrantable, should we use an open-face crown, a so called "hood" or "groove" attachment, or some other method?

6th. Should we use a "fixed" or a "removable" structure in the building of our bridges? This is a very valuable article and deals with the above questions in a masterly way.

The *Dental Digest* contains another article of Dr. Goslee, A Perspective View of Crown and Bridge Work, which may also prove interesting to some.

The DENTAL SUMMARY of November, 1908, in an article of Dr. J. Q. Byram prophesies Crown and Bridge Work of the Future. It is a sensible prophecy.

Would like to call your attention to other articles on bridge work which contain valuable and interesting ideas, but time will not permit, as I have three other subjects for your consideration.

I will call your attention to a few articles on crowning which have appeared since our meeting, last October.

The *Dental Brief* of May, 1909, contains an article by Dr. Roach on Cast Base Porcelain Crowns, containing valuable suggestions.

The DENTAL SUMMARY of July, 1909, A Combination Cast Crown, by Dr. Simpson. In the same number Dr. Crandall gives an all cast crown. This issue of the SUMMARY contains ten different articles on crowning, all of which are worth reading.

ORAL SURGERY.

The *Dental Digest* contains an article by Dr. Charles Greene Cumston on A Clinical Study on Sarcoma of the Tongue.

The DENTAL SUMMARY of June, 1909. The Deformity of Hare Lip and Cleft Palate, its Influence Physically and Mentally, by Dr. T. W. Brophy.

The DENTAL SUMMARY of February, 1909, contains an article by Dr. H. H. German on Tumors of the Mouth.

In the April issue Dr. F. H. Skinner gives some very valuable hints in extraction under anesthesia.

The *Dental Brief* for October, 1908, contains an article by Dr. R. D. Carman. He says evidence is abundant that the X-Ray can be developed into an available and serviceable accessory in dental practice. By all means do not miss reading it.

In the *Dental Brief* of November, 1908, Dr. James Truman, Professor of Materia Medica of the University of Pennsylvania, has given us an article on Sensitivity of Dentine and Related Conditions. Read it and if you have already done so, read it again. It is valuable.

In the same issue of the *Dental Brief* you will find an article by Dr. J. Wilbur Shankland on Fractures of the Inferior Maxillary Bone. Do not pass this by without due consideration.

In the *Dentist's Magazine* of December, 1908, Dr. John T. Grant has written an article on Human Character and Anesthetics.

The *Dental Brief* of July, 1909, contains one of the most able articles by one of our most able surgeons. The Intracranial Causes and Operative Treatment of Trigemmal Neuralgia, by Dr. John B. Deaver of Philadelphia.

The same issue contains Dr. John K. Mitchell's article. The Treatment of Trigemmal Neuralgia. Do not miss reading either of these articles.

The January *Dental Cosmos* has an article by Dr. G. V. I. Brown. The Surgical and Therapeutic Aspect of Maxillary Re-Adjustment with Special Reference to Nasal Stenosis, Hare-Lip, Cleft Palate and Speech.

The *Dental Cosmos* of June, 1909, contains Dr. J. D. Thomas' article on Extraction of Teeth: Local Anesthesia. This is the best article of its kind that I have read. It treats of the detrimental effects of cocain injections.

There is one more article on Oral Surgery I wish to call your attention to. Tumors of the Mouth, by Dr. H. H. German. You will find this in the December *Cosmos,* 1908.

ANESTHESIA.

Probably the most interesting writing on anesthesia during the last year is the English "General Anesthesia Act 1908."

In the Editorial Department of the *Dental Cosmos*, we find this criticism.

We do not know who is responsible for the drafting of this extraordinary measure, so that what we may say of it in a critical way is quite impersonal in its application, but taken as a whole it strikes us as an amazing example of attempted legislative stupidity. Shades of Horace Wells, Morton and Simpson—to say nothing of Sir Humphry Davy! Anesthesia a dental discovery—the greatest boon ever bestowed upon humanity for the relief of agony and suffering, given to the world by dentists—and now a few super-serviceable medical enthusiasts of monopolistic tendencies would arrogate to themselves the exclusive right to dispense its blessings.

HARRISON D. BEST.

PATHOLOGY, THERAPEUTICS AND DENTAL JURISPRUDENCE.

Dr. F. W. Barbour in the *Dominion Dental Journal* recommends for the immediate sterilization and filling of septic canals, the use of sulphuric acid, full strength, which he applies several times, each being neutralized by a saturated solution of bicarbonate of soda, then using for ten minutes a five per cent solution of formalin, after which the filling is completed.

Dr. M. Kner in the *Wiener Medical Presse* says: That in connection with pyorrhea alveolaris, neuralgic or rheumatic pains are sometimes met with which are very difficult to allay; in such cases he has found that one part tannic acid to five parts dilute alcohol is very efficacious, this margin of the gingivae on the sensitive side being painted several times, whereupon, he says, the pain will disappear.

The Commission on Scientific Research of the New York State Dental Society, recommends the administration of one grain of potassium sulphocyanate every night before retiring, as a preventative, at least to some extent of decay of the teeth. They claim that observation has shown that in mouths where rapid and general decay of the teeth exists, potassium sulphocyanate is absent, whereas in the mouths of those who have good teeth, it is present in large quantities.

In a paper delivered before the Northern Ohio Dental Society in June, last, and reported in the current number of the DENTAL SUMMARY, Dr. Frank W. Low of Buffalo advises the administration of the potassium sulphocyanate.

He asks the question: Can stomatic conditions be so modified by resorting to stomachic medication that frail human teeth may be rendered more immune to environal tendency to rapid decay?

Answering his own question, he says: Yes—for short. He then proceeds to give his deductions and the theory from which he arrives at his answer of yes. His dose is half that I have previously mentioned.

He gives instructions, how to investigate and determine whether you should administer the drug. How the treatment should be carried out.

He does not assert that his conclusions have been proven true beyond the possibility of doubt, but that enough has been established to warrant him in asking the dental profession to take the matter up and demonstrate its truth or falsity. Let the evidence come from the mouths of a multitude of witnesses. And then again he asks a question: Is the day not about to dawn when the reputable dental practitioner will be more of a doctor and less of a cobbler than at present?

I have not had time as yet to read every word in the paper, what I have read has given me food for thought, I fully realize that the Doctor's effort is to raise and incite the individual dentist to loftier aims.

Get and read the whole paper, it will repay you.

In some States, particularly Ohio and Michigan, where local option has apparently taken such deep root, the question is being asked: Has the Dental Surgeon the right to prescribe liquor to a patient?

A literal interpretation of the law, in my opinion, does not give this right in the State of Michigan nor do I believe that it does in the State of Ohio. But let us come right home to our own State.

Has the Dental Surgeon this right in the State of Pennsylvania? With or without local option, I do not believe that the laws of the State give him that privilege. The law recognizes the right of a physician to do so.

The point of any controversy that might take place hinges on the position that the law takes as to whether the Dentist can be and if so is he classed with the Physician in so far as prescriptions are concerned.

There are those who claim that he is a Physician, and to me, justly so.

What is the definition of a "Physician?" Webster says, "A person skilled in the art of healing; one whose profession is to prescribe remedies for diseases." I ask, is not the Dental Surgeon skilled? I hear you all answer, Yes. Does he not prescribe remedies for diseases? Again I hear you say, yes. Now do not be astonished at the statement I am about to make, which is this: That the Dental Surgeon in the State of Pennsylvania does not possess the right to give a prescription to a patient which the druggist is required by law, to fill, and it will make no difference whether such prescription is for liquor or drugs. I deny the right of the druggist to fill it for a dentist any more than he would for any layman. More, I will go even further and deny the right of the Dentist to even medically treat a tooth. Do not make a mistake and get the idea that I believe that he could be successfully prosecuted for so doing, for I do not believe he could. Well, you ask, who can prescribe, etc.? I answer, the Physician, who is a Physician under the law. The act of 1887 defines that the only person that can treat medically is "One that has received the Degree of Doctor of Medicine, and who has complied with the other legal requirements of the laws."

I think that it is high time we woke up to the position which we occupy and had such enactments passed that will give us the legal standing which is ours, by right.

J. HOLTON ROBINSON.

REMARKS.

W. L. FICKES: Dr. Robinson has made a statement in his report which should not pass unanswered. I refer to his statement "That the Dental Surgeon in the State of Pennsylvania does not possess the right to give a prescription to a patient which the druggist is required by law to fill" and that he "denies the right of a dentist to medically treat a tooth."

In answer to these statements I would refer you to Williams "On Laws Relating to Physicians, Druggists and Dentists" and to an article by Frederic Worthen Frost, A. B., L. L. B., an eminent member of the New York Bar, in the March number of the *Dental Brief*, volume XIV, entitled "Some Legal Questions Involved in the Practice of Dentistry."

Each of these authorities states "that the law relating to dentistry is, for many purposes, simply one branch of the general law relating to physicians and surgeons. That the word physician includes in law all who practice physic or surgery and is not limited to any one school of practitioners. That, in the broad sense, the term physician includes a dentist. That along broad general lines, for all practical purposes, the law applies alike to physicians, surgeons and dentists. That by merely undertaking the treatment of a patient, the physician (and this includes dentists), implies by contract with the patient that he has such skill, science and information as will enable him properly and judiciously to perform the duties of his profession. A dentist undertaking the treatment of a patient is only required to possess and exercise that degree of skill and learning ordinarily possessed and exercised by the members of his profession in good standing, practicing in similar localities, and it is his duty to use reasonable care and diligence in the exercise of his skill and the application of his learning, and to act according to his best judgment. One who holds himself as a specialist in the treatment of particular diseases or conditions is bound to exercise such skill and to possess such learning as is exercised and possessed by practitioners who are specialists in the treatment of such diseases or conditions."

The druggist does not necessarily have to fill a prescription from any practitioner, whether he be a physician, surgeon or dentist. Neither does a dentist have to treat a patient unless he has already undertaken the case.

In certain states there are special statutes governing the dispensing of medicines or drugs. In some instances these limit the rights of the dentist, but broadly speaking, and especially in Pennsylvania, the legal rights of the dentist to prescribe are the same as those of the general physician, except as limited by the diseases which he has a right to treat. There is no question as to the right of the dentist to treat diseases of the oral cavity and to prescribe for the same.

> POVERTY sits by the cradle of all of our great men, and rocks them up to manhood; and this meagre foster-mother remains their faithful companion throughout life. —*Heine*

THE·SUCCESSFUL DENTIST

MANAGING PATIENTS

By C. N. Johnson, M. A., L. D. S., D. D. S., Chicago, Ill.

THE MANAGEMENT OF CHILDREN.

TO BE successful in the management of children means a great deal in the maintenance of a satisfactory and permanent practice. The children of today make the patients of a few years hence, and if a practitioner has the tact and patience to control children from the time they first come to him till they grow to years of accountability he can then have a class of practice built upon the lines of his own choosing and of a character to harmonize best with his individual preference. There is nothing more interesting in life than to watch the development of a child and study the various manifestations of character-building as exemplified in their attitude towards one with whom they are brought into close relationship as the dentist. Child-study is always instructive, and it is doubly so when conducted from the point of view of a professional association. The dentist should early aim to understand his little patients, to gain their confidence and enlist their sympathy with whatever he attempts to accomplish for them. If he really loves children and always treats them in a frank and cordial manner, he will in turn receive at their hands a reciprocal attachment which eventually will prove one of the greatest inspirations to high professional endeavor. The implicit confidence of a child is no small thing to attain, and he who has this is not altogether bereft of satisfaction in the conduct of his affairs.

The first thing a dentist must learn in the management of children is not to deceive them. He should aim to avoid giving pain to a child whenever possible; but if it is found necessary to inflict pain in an operation, the child should never be promised that there will be no pain. The magnitude of the hurt must of course not be exaggerated in advance. In fact, it is best ordinarily to make light of it and place the best possible construction on it. It is usually well to say to the child that the dentist cannot always tell precisely whether an operation will hurt or not, but that if it does hurt a little, the child may be sure that the dentist will be very careful about it and not hurt in the slightest degree more than is necessary. But

---

FOOT NOTE—This article was originally written by Dr. Johnson for his excellent little book, "Success in Dental Practice," published several years ago, but was so fitting for the series we are printing in this department that Dr. Johnson willingly granted us permission to use it in this connection for the benefit of the profession in general.—Editor.

to promise that it shall not hurt, and thereby gain the little patient's consent to an operation which in the nature of it must give pain, is an abominable subterfuge which reacts on the dentist and raises a suspicion in the child's mind which subsequent years are powerless to efface. Different children require different methods to manage them, and with some especially obstinate and unreasonable children it may at times be necessary to employ force in accomplishing the end, but ordinarily a little tact will win the day. With most children an adroit appeal to their manhood or womanhood will work marvels. The child-mind is wonderfully susceptible to praise and encouragement, and a word which touches their pride will go far towards nerving them up to an operation.

No attitude should ever be taken towards a child except one of extreme kindness. Even if it becomes necessary to coerce a child into an operation, it should be done in the kindliest manner, and never with a display of temper; and if an issue has arisen whereby the child has been compelled to submit against his will, the dentist should take great pains to so soothe his feelings subsequently by a kindly encouraging interest in his welfare that the child will leave the office without harboring any resentment. It is sometimes astonishing how a stubborn child will yield to a gentle reasoning and a cordial show of kindness immediately following a contention in which the dentist has come out master of the situation. Kindness is very soothing under these circumstances, and it also proves to the child that, after all, the dentist is a good friend, and if he does hurt, it is only because of necessity and solely for the patient's good.

But it is best if possible to avoid giving much pain to children. Usually palliative measures are preferable whenever they can be made effective, particularly till the little patient has grown accustomed to the dentist and has been led up by a skillful system of management to the point where a reasonable amount of pain will be tolerated without protest. The first visit of a child to a dental office is usually a momentous occasion, and except under the most urgent necessity no pain should ever be given at this time. The child, if timid, should be entertained by the dentist in such a way that so far as the dentist personally is concerned there is no fear. It is frequently well to make the first examination of the teeth without putting the little tot in the dental chair, and if the child is very young, it is usually best to have the mother or nurse hold it in her lap. Then when the first mere glance is had the dentist should say something complimentary either of the teeth or of the patient, and if the child is not too timid he should pat the little round cheek in a friendly way, and the ice is broken once for all so far as that child is concerned. The gentle touch of the human hand has a wonderful effect on a child, and a demonstrated tenderness on the part of the dentist at this first visit influences largely his subsequent success with the little patient.

It is sometimes marvellous what children will bear in the way of pain without protest if perfect confidence has been established and an appeal is made to their pride. A case in point is worth recording as illustrative of what may be accomplished with an apparently wayward child by a little tact. A lady walked into the writer's office one day leading a crying child. The little girl was in the saddest distress imaginable, and the mother was out of sorts and irritated by the evident contention over the visit. Said the mother: "Doctor, I don't know whether you can do anything with this child or not; but she has worn us all out with the toothache, and I have finally forced her to come and see if you can stop the pain. She is the most wayward child I ever saw, and I am utterly exhausted with her."

I saw at a glance that the case between the mother and the child was in its acute stage, and that counter-irritation was not indicated for either. I approached the little girl, and said, gently: "Well, dearie, let me see what the trouble is." Instantly she dropped her mother's hand and looked up at me with such an expression of relief and confidence on that little tear-stained face of hers that I said: "Why, bless your heart, you and I are not going to have any difficulty, are we?"

"Well," the mother snapped out, impetuously, "if you can manage her, you are the first one I ever saw who could. She's the——"

But I stopped her with a gesture, and asked her if she had some shopping to do or anything to occupy her for the next half-hour. She was quick-witted enough to take the hint, and I soon had the little girl to myself in the office. The moment the mother was out of the room the tears began to dry and sobbing to cease, and in a very few minutes the little patient was perched up in the chair showing me the tooth that ached. She was one of those delicate, sensitive, high-strung little creatures, susceptible to kindly treatment, but instantly rebellious against anything harsh, and, unfortunately, mother and child did not understand each other. I treated her with the utmost tenderness and managed to relieve the pain with little discomfort. By the time the mother returned she was the cheeriest, brightest little midget imaginable, and the mother said: "Dear me, I guess you have hypnotized her. I never saw her take to anyone like that before." I told her that all the hypnotism I had used on the child was kindness, and I even ventured to suggest that she experiment on her little daughter in the same way and watch the result.

It became necessary to have many sittings with the child subsequently, and as her teeth were extremely sensitive, some of these sittings were painful, but never at any time did I hear a protest from her, nor was she ever reluctant to take the chair. I have seen her sit through an operation when at times the tears would course down her cheeks, and my only answer upon expressing sympathy for her was a bright smile bursting through the tears. What a wondrous mentality there is wrapped up in a sensitive child, and what a sacred trust it is for those to whom the care of such children is committed that they study carefully the myriad mainsprings of motive behind every act and thereby learn to bring out the best there is in this tiny "bundle of possibilities."

To the dentist it is given to accomplish great good with such children on account of the close relationship existing between patient and practitioner; and no man can make a careful and continued observation of child-life in this connection without thereby being made vastly better himself. The results will repay a thousand times for the effort.

THE MANAGEMENT OF NERVOUS PATIENTS

Next to children, those patients who are nervous or in ill-health require more diplomacy to manage than any other class, and no rule or set of rules can be made to apply to all of them. They vary so in their freaks and fancies that it is a matter of constant study to control them, and yet, in view of the fact that they are often in need of dental service, no dentist can ever be in the highest degree successful unless he develops sufficient tact to deal with them. The keynote in their management, the same as with children, is kindness. Above all things the dentist should cultivate a gentleness of manner and a sympathetic, well-modulated tone of voice, which more than anything else may be considered effective in gaining their confidence. Patience of the most sublime type is also required, and a constant scrutiny of their varying moods so as to be able to adapt one's self to them. On approaching the mouth to do anything for such patients it is essential to practice the utmost delicacy of touch and to avoid if possible giving any pain, particularly in the early stage of the operation. There is one influence of immense advantage to be used in the management of these patients, viz., encouragement and commendation. To say an encouraging word and to compliment the patient on the manner in which the operation is being endured is frequently a wonderful stimulus. But occasionally a case presents in which the patient is more foolish than nervous and when a certain amount of firmness and decision is needed. If an operator continues to allow a patient of this type to impose on him, he not only wastes his time, but even loses the respect of the patient. Every practitioner should make a careful study of this type of patient so that he may quickly distinguish between an individual who is really nervous, and who accordingly requires and deserves the utmost consideration and one who is simply irresponsible and whimsical. This latter class can usually be detected by a little artifice on the part of the operator. If there is a suspicion in his mind that the patient is feigning distress in an operation where there is no occasion for it, by flinching and otherwise acting badly, he can test the matter very readily by merely placing an excavator or other instrument with some pressure against a sound part of the tooth where he knows there is no possible chance of causing any pain. It will frequently be found with this type of patients that there will be the same flinching and the same protestations of pain as if a sensitive part of the cavity had actually been touched. It has merely become a fixed habit with the patient to protest, and such persons seem never to feel quite satisfied unless they are discommoding the operator in every conceivable way. This sort of trifling with an operator's time and patience should not be tolerated in the slightest degree, and when the imposition is once discovered the patient should be given to understand most emphatically that the operator has some rights in the case and that he proposes to enforce them. It may at times even be necessary to be somewhat severe with such patients; but the dentist should never be ungentlemanly in any instance, and whenever severity is used it should invariably be tempered by a subsequent kindness of manner which proves to the patient before the sitting is over that the dentist is not pettish or vindictive and that he does not give way to severity through any display of temper. Above all things, the patient should be dismissed from the office carrying away an impression that the dentist is master of the situation, but that he dispenses his mastery with the utmost kindness. A dentist owes it to himself, to his patient, and particularly to his profession that he maintains the reputation of being at all times a high-minded gentleman, and in no instance of his professional relationship is this of greater moment than in his dealing with the class of patients under consideration.

It is often possible by the exhibition of a little tact and judgment to so control some of these irresponsible individuals that a permanent impression is made upon them to the betterment of their disposition, and a dentist's influence for good may thereby be widened far beyond the mere service he performs upon the teeth. A man in any walk of life should have the broadest possible conception of his duty to his fellow-man, and in the practice of a profession this duty is particularly obligatory; so that a dentist should never be content with the mere performance of his technical operation without a wider interest in his patient's general welfare. This does not imply that a dentist should ever go out of his way to pry into matters that are none of his affair. A gossipy, inquisitive dentist is an abomination in the sight of intelligent people, and, aside from its impertinence, such a course is especially prejudicial to his success. But he can take an active interest in his patients and can often find opportunities for a genuine service in character-building—particularly with children and nervous, irresponsible individuals—without in the slightest degree intruding beyond the limits of propriety or in any way compromising himself.

THE MANAGEMENT OF PATIENTS IN GENERAL.

As has already been intimated, no dentist can expect to be successful unless he first learns how to manage the different types of people who come to him. A dentist should be able to read character in the face of every individual and to know how to approach each different class the moment they appear. Not that he should constantly sink his own individuality into that of others, but that he may so control the individualities of those who come under his ministrations that he can make his practice run along smoothly and without the friction which often mars the career of the most promising practitioners. Enough has already been said along this line, but its importance cannot be too strongly urged nor too often repeated.

EDITORIAL

ANESTHETICS IN DENTISTRY

IN REFERRING to improved methods of administration and a better understanding of anesthetic agents and their action, a medical writer states that, "practically all the dangers can be avoided by an expert anesthetist in the judicious choice of the anesthetic and a skillful method of administration."

From the numerous deaths reported from administering anesthetics, particularly chloroform, for extraction of teeth, we would judge that there is either something wrong with the above statement or that many unskilled anesthetists are to be found among physicians who administer anesthetics for dental extraction. Of course, we cannot ascertain wherein the administrators have been at fault, if at all, but in dealing with so important a thing as a human life it does seem as though a thorough physical diagnosis should be made before the beginning of administration of any general anesthetic, especially to a dental patient who is to lie in a semi-recumbent position, and we know there is much carelessness in this regard.

The question of the choice of an anesthetic for the extraction of teeth is a matter for serious consideration and the dentist should have some say as to what shall be administered in his office and for his patient. When anesthesia was first discovered the only demand was that it relieve the patient of the knowledge of all pain during an operation, and such would seem to be still in vogue if we take into account the apparent reckless manner in which anesthetics are often administered.

Dentists in general should have a better understanding of anesthetics, their peculiarities, where contra-indicated, precautions to be taken in their administration, etc.

The opinion of the writer is that chloroform should never be allowed to be given as an anesthetic in the dental office. We will not attempt to dictate to the dentist what agent he should employ, but to "*set him thinking*" we have arranged to publish several splendid papers on the subject of anesthesia in this issue of THE DENTAL SUMMARY and we hope every reader will peruse them.

In addition to what our writers have to say we will add a few ideas advanced in recent medical publications.

From an article in the *Journal American Medical Association* we learn that Dr. W. D. Gatch, of Baltimore, has been experimenting at Johns Hopkins Hospital with nitrous-oxid-oxygen anesthesia by the method of rebreathing. He says:

"My object at the outset was to develop a method of administering these gases so simple, cheap and effective as to make possible their more general use. As nitrous oxid and oxygen are expensive, it seems to me that the solution of the question of their administration, so far as cost and convenience are concerned, must lie in using them over instead of wasting them after one inhalation."

If this were the only reason for employing this method we would not countenance the article but Dr. Gatch claims advantages in the rebreathed anesthetic and a marked diminution in shock occurring from its employment.

The apparatus he uses consists of a holder for two cylinders of nitrous oxid and one for oxygen, a rubber bag, a face-piece and connecting tubing. The face-piece consists of a valve box and a mask. The valve box is made on the principle of a trombone and has an outer and inner tube. By sliding the latter to a given one of three positions, the patient may be made to breathe air in and out through the valves, or gas (with oxygen if desired) in and out through valves, or gas to and fro into the bag. He says the apparatus itself is inexpensive and that there is so little mechanism to be considered in the apparatus and the administration is so simple that the anesthetizer has plenty of time for observation of his patient. Regarding the physiological effects of the rebreathed gases he says:

"The question now arises whether rebreathing in the manner I have just described is injurious. Many writers have attached great importance to certain volatile organic poisons in the expired air. This has caused several inventors of apparatus for giving nitrous oxid and oxygen to do away entirely with rebreathing. Hewitt's apparatus, although its inventor states that rebreathing is probably not harmful, does not permit rebreathing. Dr. H. Warren Buckler, anesthetist for Dr. H. A. Kelly, has used the method of rebreathing for several years and has noted no ill effects therefrom. I have sought from the first to determine to what extent rebreathing is permissible. Prof. W. H. Howell has reviewed the experimental data bearing on the question of the harmful products of expired air. His conclusion, which is based on the experimental work of Haldane and Smith, is that it is highly improbable that any volatile organic poisons exist in the breath, and that the only harmful products of respiration are water vapor and carbon dioxid. He says:

> Individuals, kept in a confined space for a number of hours, give no symptoms of evil effects except when the accumulation of carbon dioxid has reached a concentration of over 4 per cent. At this concentration rapid breathing is apparent, and if the carbon dioxid rises to 10 per cent great distress is felt, and the face becomes congested and blue.

If we accept these conclusions as correct, we may make a rough calculation based on them to determine the number of times a patient may rebreathe a given quantity of gas without injury. The average volume of an expiration for an adult is 500 c.c. This contains 4 per cent, or 20 c.c., of carbon dioxid. Therefore an adult patient can breathe the contents of a bag containing 8 liters of gas sixteen times before the carbon dioxid content of the same will reach 4 per cent.

"Rebreathing, provided enough oxygen be given to prevent cyanosis, can be permitted for a surprisingly long time without any appreciably injurious result. I have tested this by having healthy adults breathe to and fro the contents of a six-liter bag of oxygen. This may be done from four to eight minutes without the slightest change in pulse or blood-breathe, and there is some sweating; otherwise there is no discomfort from this experiment.

"The pulse, respiration and blood-pressure, once anesthesia is well established, are very little affected by the trauma of the operation. Henderson contends that trauma produces shock chiefly by increasing the ventilation of the blood in the lungs. Rebreathing prevents such ventilation.

"According to Henderson, carbon dioxid has a direct stimulant action on the vasomotor center.

"The carbon dioxid is not the only product of expiration the effect of which must be studied with regard to rebreathing. The heat of the exhaled gases has also an important action. Normally the body loses a large amount of heat in the expired air. This loss is prevented by rebreathing. Therefore there is a rise of body temperature. This I have almost always found to be over half a degree in anesthesias of thirty minutes or more. During an administration of three hours the temperature rose 1.3 degrees.

"Rebreathing is thus a most effective method of heating the gases, which are cold on being freed from their cylinders.

"The body also loses considerable moisture by way of the lungs. Water vapor accumulates in the rebreathed gases, but this, so far as I have observed, has no ill effect on the patient."

"Besides being safe and convenient, this form of anesthesia has, I believe, a unique characteristic which makes it especially valuable for very sick patients. I refer to its remedial action for shock. This effect, which has already been discussed, may make of the anesthetic an aid instead of an evil. Furthermore, I have seen no cases of postoperative collapse following its use. Patients who cannot be easily anesthetized by nitrous oxid alone may first be etherized to a moderate depth and the anesthesia then continued with nitrous oxid. The therapeutic effect of rebreathing may thus be secured for all cases."

Dr. C. U. Collins, in an article in the *Journal American Medical Association* lays much stress on the use of scopolamin and morphin as a preliminary to general anesthesia. In part he says:

"With all the improvements in the choice of anesthetics and the method of their administration, there still remains with the patient a strong disinclination toward being put to sleep and passing through unknown dangers while utterly powerless to help himself in any way. This decided antipathy to being made unconscious amounts at times to a positive terror, and has been advanced as a cause of some of the sudden deaths reported under anesthesia. It was a desire to overcome this unpleasant feature that led me to use the combination of scopolamin and morphin as a preliminary to general anesthesia on myself at one time when I changed places and became, for the time being, patient instead of surgeon. The action of the preliminary was so satisfactory that I adopted its use in my work, and the following report, based on 1,120 cases in which it was used, is made so that the truth concerning this much abused combination may be ascertained."

Concerning the technic of administration he says:

"Tablets are obtained containing a combination of scopolamin, 1-100 grain, and morphin 1-6 grain, and the solution is made just before it is administered hypodermically, which is done one and one-half hours before the operation is begun. Relatives or friends are not allowed to see the patient after the hypodermic has been given. Sometimes an exception is made in the case of a husband and wife, but imperative instructions are given that the patient is not to be talked to and roused.

"All necessary manipulations and handling of the patient in the preparation are completed before the hypodermic is administered. The room is darkened and everything kept quiet, and he falls into a tranquil slumber. About twenty minutes before the operation a layer of damp cotton is placed over the eyes and the patient is taken to the operating room and placed on the operating table. The preliminary cleansing of the skin over the site of the operation is gently done while the general anesthetic is being administered. The preparation and the anesthetization are usually completed about the same time and the operation proceeds.

"The preliminary hypodermic injection of the combination is given to all patients from eight years of age up.

"I have not found any contra-indication to the combination. If a patient's condition is sufficiently good to make an operation justifiable it is sufficiently good to permit the use of the preliminary injection of scopolamin and morphin. Very ill patients do better when very little general anesthetic is given them, and the preliminary of scopolamin and morphin permits the minimum amount of the general anesthetic to produce the desired amount of anesthesia.

"When I first began to use the combination I used some chloroform as a general anesthetic, but I quit using chloroform after a time and began using ether almost exclusively. In the majority of the cases embodied in this report the combination was used as a preliminary to ether as a general anesthetic. Lately I have been using nitrous oxid gas to a considerable extent and find that the scopolamin and morphin combination acts equally well as a preliminary to that general anesthetic. There is a great deal less of the convulsive movement of the muscles as the patient is going under the influence of the gas when the preliminary is used."

Dr. J. E. Engstad advocates Ether as an Antidote of Cocain and Stovain Poisoning. He says:

"In common with most practitioners, I have had my share of cases of cocain poisoning, though fortunately none proved fatal. By far the greater number of deaths occurred in the hands of dentists. The use of the drug has been an almost daily occurrence in their practice, and they seem especially prone to disregard its dangers.

"I had as a next-door neighbor a dentist with a very large extraction practice, and it became a not uncommon occurrence for me to be called in hurriedly to help revive some patient. To my knowledge, he had at least fifteen cases of cocain poisoning. Some were mild cases; many were profound and extreme. The symptoms were rapid and shallow respiration, feeble or absent pulse, with unconsciousness; in some cases the patients were difficult to revive. Nearly all exhibited extreme mental anxiety and restlessness.

"It was necessary to find a remedy that could be administered at any time and be instantaneous in its action. I soon found ether to be the required drug. This was administered as ordinarily given to produce surgical narcosis. Ether stimulates the vasomotor system, is a tonic to the heart muscles, stimulates the action of the respiratory centers and of the brain and of the pneumogastric nerve, and increases the pulmonary circulation in the first stages. While cocain inhibits the action of the heart, especially on the right side, it has also a marked inhibitory action on the respiratory centers of the brain. Death may occur from feeble respiratory movements of the so-called Cheyne-Stokes type, or asphyxia.

"To me ether has proved extremely valuable. It has saved what seemed hopeless cases. It stimulates the heart and the respiratory system almost instantly. The pulse becomes fuller at once and of normal tension. The marked mental excitement is allayed as the patient goes under the influence of the ether, and the effect of the poison rapidly disappears. The individual regains consciousness as soon as the effect of the small amount of ether has disappeared.

"To get the best results, the anesthetic is administered only to the degree of mild surgical narcosis, or, at times, even less than this. A mask should be employed and the ether given by the drop method. This is all-important. Given by the old method, the ether would only add to the danger of asphyxia by excluding air from the venous blood engorged lungs.

"Just at present there is much interest in the work of Jonnesco and his use of stovain. Many physicians will undoubtedly be led to try stovain, or cocain, or some other synthetical preparation whose action is similar. While in Paris some years ago it was my privilege to witness Tuffier perform a number of operations under spinal anesthesia with cocain, all done in the brilliant style of this acknowledged master of surgical technic. In the last operation I saw in his clinic the patient did not bear the drug well, but began to show some very dangerous symptoms, and, in spite of the usual remedies, was soon *in extremis*. At my suggestion a few drops of ether were administered and all dangerous symptoms disappeared immediately."

DENTISTRY LEGALIZED AS A SPECIALTY OF MEDICINE

Virginia has just enacted a new dental law that is a radical departure from those in other states as it legalizes dentistry as a specialty of medicine.

Sec. 2 of the bill reads as follows:

> "From and after January first, nineteen hundred and fourteen, Anno Domini, the practice of this specialty (dentistry) in this state shall be a branch or specialty of medicine and surgery, and no person, after this act goes into effect, shall be given the examination or a certificate required by section four of this act unless he shall first show to the satisfaction of the examining board provided herein that he has passed the examination provided by law for applicants to practice medicine or surgery and has received from the Virginia state board of medical examiners the certificate thereof as required by law to be given by them to such applicants."

Other features of the law are, that a board of dental examiners, consisting of three practitioners of dentistry of acknowledged ability in the profession, shall be appointed by the Governor upon recommendation of the Virginia State Dental Society. The member of the board to hold office for three years (after the first appointment), one member going out of office each year and his successor to be appointed by the Governor from two persons nominated by the Virginia State Dental Society.

All licensed dentists must register with the board each year.

The examination fee will be two dollars for each examination and the registration fee will be one dollar for each person registering.

Physicians or any other persons are permitted to extract teeth for anyone suffering from toothache and bona fide students in regular attendance at any dental college in the state may practice dentistry, under direct supervision of one of its teachers, in the regular infirmary of such college.

CORRESPONDENCE

THE NEW DENTAL LAW IN VIRGINIA

By F. W. Stiff, D.D.S., Richmond, Va.

Editor The Dental Summary.

Dear Doctor: You ask me to comment on the new Virginia dental law for publication in your May issue. Some three years ago there was read a paper on the subject of "Dental Education" before the State Association (it doesn't matter by whom) and the members were so impressed by the importance of the subject that a committee was appointed to create sentiment and if it thought wise introduce a bill in the next legislature to secure a proper recognition of the branch. This committee has been working on the subject faithfully ever since. The bill just passed by the legislature is the result of much travail on the part of the committee and the friends of the movement in Virginia. It does not suit us in all respects, but before it is too severely criticised, the reasons for certain objectionable sections should be weighed.

It might be asked why have a dental examining board if dentistry is recognized as a branch of medicine? Why not put two or more dentists on the medical board and have no dental law at all, letting dentistry stand with the other speialties.

We wanted to do this, but not having the consent of the State Medical Association to alter their law, we feared opposition from some of its strongest members if we attempted such a thing. The president of this association has a strong following and is opposed to the movement, solely, as he admits, on a mercenary ground, claiming that it would reduce the number of *his* dental matriculates.

We found that to alter the medical law so as to admit dentistry as a specialty, would require that dentists should be appointed on the medical board to examine on the subject. We did not know how strong we would be before the legislature and felt we had better not endanger our chances by interference with the medical law.

Of course, if our view is correct: that dentistry is as much a part of medicine as surgery or opthalmology or any other of the many divisions of the science, then the proper, logical action would have been to abolish the dental board and dental law and require that one or more practitioners of the dental branch should be appointed on the medical board to examine ALL applicants on the subject of dentistry, irrespective of whether they would practice dentistry or any other branch, but as an evidence of their qualification to receive the degree of M. D. For what dentist does not know how important it is for the physician to understand the principles of dentistry? The physician knows but little more about dentistry than any other patient we have in our practice. It hasn't been six months since a teacher in one of our medical schools asked me if there was circulation in the teeth. Not one in ten knows the first permanent molar from the deciduous molar. This is not guessing. I know it.

If medicine is the science which treats of the diseases of the body, the general practitioner of medicine, if not the other specialists (I do not mean the others should not), should, for the dear people's sake know something of the teeth and mouth, certainly an important part of the body.

So what is wanted, is a school with the foresight and nerve to realize that medicine is too large a subject to be grasped and used by one mind. That dentistry, treating as it does a part of the body must be a branch of medicine. And this being so that it is incumbent upon the medical student to study this branch as any other, before qualifying for his degree. That because of the immensity of the field of medicine this school should see that the student must specialize,—must spend only a portion of his time on the general principles of medicine, after which, having decided what branch he will practice, put the most of his time on that specialty. Let him be required to know the principles of all the branches, because the body is one whole, and to know a part one must have a general knowledge of the whole, the relation of part to part and each part to the whole.

Let this be done and the family doctor will be able to do so much that he cannot now do toward saving the people's teeth,—cannot do now because he is as ignorant as his patient, because the system under which he was educated, does not require that he shall know anything about one of the branches of his profession.

The degree of D. D. S. is at least comprehensive and descriptive, if it does occupy the anomalous position of being the only degree given to a branch of medicine; but the M. D. degree is misleading in that it is bestowed upon men who have not covered the field of medicine. They lack one branch, that of dentistry.

Under the new law the man who takes ALL the branches of medicine will be entitled to this degree, and only he.

But, I am scribbling too much.

Another objection that might be raised is the small examination fee of $2.00. This was made small because the poor fellow will have the full fee to pay for his general medical examination, and to double up was thought to be too hard on him.

The law is on the statute books. Now, can we live up to it? Can we teach dentistry as a branch of medicine for dentists, along with other medical studies (letting, for the time being the medical student leave out dentistry) in four years, taking dental branches in vacation or post course, or by adding another year?

It will be a hard course and only the demand for dentists would make it seem desirable to a student. Medicine plus dentistry, is what it means. If the student is allowed to specialize, as he should be, it will not be so hard. Just this. The way must be found. Our best men must get together and formulate some plan of study.

NEW DENTAL LAW ENACTED IN VIRGINIA

A BILL

To define Dentistry, to regulate the practice of the same and to provide penalties for the violation of the provision of this act.

Recognizing that dentistry is a specialty of medicine and surgery: therefore,

Be it enacted by the General Assembly of Virginia, That after this act goes into effect, it shall be unlawful for any person to engage in the practice of this specialty for compensation as either assistant or employee or to receive a license from any commissioner of the revenue to practice this specialty, except he shall have passed the examinations provided by this act and received the certificates herein provided for, and any person practicing this specialty in this State without having passed examinations and received certificates, as herein provided, shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be fined not less than one hundred dollars nor more than two hundred and fifty dollars for the first offence, and for the second offence a fine of not less than five hundred dollars, or imprisonment of from three to twelve months in jail, or both, in the discretion of the jury. Nor shall such person receive any compensation for services rendered by him: provided, that nothing contained in this section shall prevent any authorized physician or surgeon from extracting teeth or any other person from extracting teeth for anyone suffering from toothache, or to prevent a bona fide student in regular attendance upon any dental college in this State, from practicing dentistry, under the direct supervision of one of its teachers, in the regular infirmary of such college.

On the trial of any person charged with violation of any of the provisions of this act, it shall be incumbent on the defendant to show that he has authority under the law to practice this specialty in this State in order to relieve himself from the penalties herein prescribed.

Any commissioner of the revenue who shall, in violation of section one, issue a license to any person not authorized to practice this specialty by this act, shall, upon conviction thereof, be fined not less than twenty dollars nor more than fifty dollars, and no license issued by any commissioner in violation of this act shall be valid.

2. From and after January first, nineteen hundred and fourteen, Anno Domini, the practice of this specialty in this State shall be a branch or specialty of medicine and surgery, and no person, after this act goes into effect, shall be given the examination or a certificate required by section four of this act unless he shall first show to the satisfaction of the examining board provided herein that he has passed the examination provided by law for applicants to practice medicine or surgery and has received from the Virginia State board of medical examiners the certificate thereof as required by law to be given by them to such applicants.

3. There shall be for the commonwealth of Virginia a board of dental examiners consisting of three practitioners of dentistry of acknowledged ability in the profession, to be appointed by the governor upon recommendation of the Virginia State dental association. Such examiners shall hold office for a term of three years.

The board shall continue to be divided into three classes, with one member each, one of which classes shall go out of office each succeeding year. And the governor shall annually appoint the successors of each class, as it goes out of office, for the term of three years. He shall make the appointments in each case from two persons who shall be nominated by the Virginia State dental association and reside in different sections of the State.

All vacancies for unexpired terms shall be filled by the governor on nominations made by the board. If no such nomination be made, the governor may appoint such persons as he may deem fit.

4. It shall be the duty of this board to meet annually at a time and place of meeting of the Virginia State dental association, or at such time and place as the board may agree upon, to conduct the examination of the applicants. They may also meet for the same purpose at the call of two members of the board at such time and place as may be designated by them. Thirty days' notice of the meetings shall be given by advertising in at least two of the daily papers published in the State. It shall be the duty of the said board to grant a certificate to practice this specialty to all applicants who undergo the State examination and receive at least two votes, which certificates shall be signed by the members of the board and be stamped with a suitable seal. It shall further be the duty of such board to register the name and qualification, as far as practicable, of every person to whom such certificate is granted in a book to be kept for such purposes.

5. Any member of the board may, upon presentation by any applicant of the evidence of the necessary qualifications to practice this specialty under this act, grant a temporary license to practice until the next meeting of the board and no longer: provided that no such temporary license shall be granted to any person who has not passed the examination and obtained the certificate of the Virginia State board of medical examiners.

6. The book provided for by section four shall be a book of record, and transcripts from it certified by the officer who has it in keeping, with the seal of the board affixed, shall be evidence in any court of the State.

7. Every person practicing this specialty in the commonwealth of Virginia at the time of the passage of this act shall annually register his name and postoffice with the board of examiners before renewing his license, and it shall be the duty of the board to issue to each person so registered a certificate of registration stamped with the seal of the board and signed by its secretary. Such person so registered may continue such practice without incurring any of the liabilities imposed by this chapter by annually causing his name and residence or place of business to be registered by such board, who shall keep a book for that purpose. Such registration may be made by furnishing proof of the fact of being then so engaged in the manner prescribed by law. All persons holding a certificate of ability from said board shall annually register in like manner. A certified list of the persons registered from each city or county shall be furnished the clerk thereof, except that in the city of Richmond such list shall be furnished the clerk of the chancery court of said city, and each name on such list shall be at once recorded by such clerk in a book to be kept for that purpose, for which he shall receive a fee of fifty cents for each certificate of the person so recorded, to be paid by said board. Every person who prior to the passage of this act was duly authorized by said board to practice this specialty in this State, and whose certificate is duly registered and recorded as herein prescribed, shall be allowed to continue to so practice. But no license to practice this specialty shall be issued by any commissioner of the revenue to any person whose name is not so recorded in the clerk's office of the city or county as herein prescribed, and any person who shall engage in the practice of this specialty and fail to register with the board as herein prescribed, shall, after ninety days' notice in writing from said board of such neglect, be liable to the penalties prescribed in this act.

8. Fees from applicants and registration.—Said board shall charge each person who appears before them for examination a fee of two dollars for each examination, and shall charge for each person registering one dollar. From the funds received all proper and reasonable expenses of the board and each of its members, incurred in carrying out and maintaining and enforcing the provisions of this chapter, must be paid. No part of such expense shall be paid out of the State treasury. Any excess of receipts over disbursements shall be paid by the board to meet future expenses of the board and members. The secretary of the board shall have custody of its funds and may be required to give bond in such terms as the board may direct. An itemized report of the proceedings of the board, containing an account of all moneys received and disbursed, pursuant to this chapter, shall be made to the governor on the first day of February of each year.

9. This act shall be in force from and after the first day of January nineteen hundred and fourteen, anno domini.

10. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

TO THE DENTAL PROFESSION OF AMERICA

At the December 1909 meeting of the Ohio State Dental Society it was unanimously resolved that an American Memorial be established to perpetuate the memory of the late Dr. Willoughby D. Miller, as an evidence of the profession's appreciation of his laborious and fruitful researches for the scientific advance of dentistry.

From the concensus of opinion of various state and local societies it was decided that the memorial take the form of a monument, to be erected in a suitable public place in Columbus, Ohio, the capital of Miller's native state. The monument to consist of a life size bronze of Dr. Miller, mounted upon a granite base of suitable proportions with appropriate tablets, the cost of which will approximate $8,000.

Though his scientific career was in a foreign land, the great pride he showed in his American citizenship, the love for his profession in America, and his final plans for educating students in his own country in the line of work he had so ably begun, should make this memorial movement National in its scope, and to this end the committee in charge has selected Honorary Committees in the several states to co-operate in bringing this matter to a successful issue.

This movement has received the endorsement of the National Dental Association. Ohio will raise $1,200 for this fund and it is the desire of the committee to have one tablet to state that contributions were received from representatives of the profession in every state of the Union.

Contributions are desired from individuals as well as societies, in fact, many small subscriptions are preferable to a few large ones.

The committee has selected Dr. Weston A. Price, 10406 Euclid Avenue, Cleveland, Ohio, to act as treasurer of this fund, and to him all subscriptions should be made payable.

That your state may be represented in this fund and appear in the published list of subscribers, we ask your earnest support. Your response to this appeal will be the measure, not only of the success of our committee but of the appreciation of American dentists for one who raised the standard of the profession. Edward C. Mills, Chairman, 16 South Third St., Columbus, O.; J. R. Callahan, 25 Garfield Place, Cincinnati, O.; S. D. Ruggles, Portsmouth, O.

PENNSYLVANIA BOARD OF DENTAL EXAMINERS

The Board of Dental Examiners of Pennsylvania will conduct examinations simultaneously in Philadelphia and Pittsburg June 8-11, 1910. For information or examination papers address Dr. Nathan C. Schaeffer, Secy., Dental Council, Harrisburg, Pa.

SOCIETY·ANNOUNCEMENTS

NATIONAL DENTAL ASSOCIATION,

Denver, Colorado, July 19-22.

Denver is the ideal summer and winter Convention City of the country. Its invigorating climate, its hotels, public buildings and its hospitality are unsurpassed. There are many places in and about Denver reached by electric cars. From almost any point in the city there is a magnificent view of over 200 miles of mountains.

A GLIMPSE OF DENVER.
Population over 200,000. One mile above sea level, in sight of perpetual snow.

Reports from the different committees of the National Dental Association promise a splendid and varied program for the entertainment of all.

The exhibition of dental supplies of all descriptions will be of great interest.

THE AUDITORIUM.
Where the meeting will be held.

The literary sessions, table and chair clinics will be in the same building, but entirely apart from the exhibits, so that everything pertaining to the meeting, will be within easy reach.

The hotels of Denver, which are legion, are strictly up-to-date in every respect, yet at the same time accommodations can be secured for $1.00 per day and up.

There are many first-class restaurants.

Round trip railroad rates to Colorado during the summer months June 1st—Sept. 30th, will prevail about as follows: Chicago, $30.00; St. Louis, $25.00; Omaha and Kansas City, $17.50.

BLACK CANYON OF THE GUNNISON.
Published by courtesy of the Denver & Rio Grande Railroad.

The Auditorium—First building of its kind ever erected by any municipality in the United States—is fireproof and arranged especially for the accommodation of Conventions, and is conveniently located to hotels and car lines.

Plan for an outing in the Rocky Mountains, either a day, a week, a month, or the entire summer can be profitably spent. Estes Park—The Platte Canon—Colorado Springs—Manitou, Cripple Creek and Victor—Glenwood Springs, The Grand River Valley—Steamboat Springs and countless other places might be mentioned, where rest or recreation can be found.

For detailed information, vacation suggestions and estimates, etc., address H. F. Hoffman, Chairman Publicity Committee, N. D. A., 612 California Building, Denver, Colo.

SOUTHERN CALIFORNIA DENTAL ASSOCIATION.

The thirteenth annual meeting of the Southern California Dental Association will convene June 16, 17 and 18, 1910, at the College of Dentistry, University of Southern California, Fifth and Wall Streets, Los Angeles. Visiting dentists are cordially invited.

This is the first of the coast meetings, and is followed by the California State Dental Association, at San Francisco, the Oregon Association at Portland, and the Washington Association at Seattle.

These meetings convene at intervals of a few days, the series being completed in time to reach Denver for the National Dental Association. B. Frank Gray, Chairman Publicity Committee, Southern California Dental Association.

PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION, SECTION ON STOMATOLOGY, FOR THE ANNUAL SESSION AT ST. LOUIS, MO., JUNE 7-10, 1910.

1. Chairman's Address—Thomas L. Gilmer, Chicago.
2. Growth and Regeneration of the Bones of the Face—Stewart L. McCurdy, Pittsburg, Penn.
3. The Surgical Principles of Harelip Operations—George V. I. Brown, Milwaukee, Wis.
4. A Study of the Repair of Cementum—M. H. Fletcher, Cincinnati, Ohio.
5. Systemic Conditions in Relation to Oral Symptoms; Pain, Factor and Septis—Vida A. Latham, Chicago.
6. The Teeth as a Factor in Pathognesis—Herbert A. Potts, Chicago.
7. Septicemia of Dental Origin—Arthur R. Dray, Philadelphia, Penn.
8. The Mouth Lesions of Syphilis and the Dangers Arising from Them—Charles M. Whitney, Boston, Mass.
9. The Relation of Pathologic Conditions of the Mouth and Systemic Disease—Henry R. Harrower, Chicago.
10. The Value of Vaccines in Oral Surgery—James E. Power, Providence, R. I.
11. The Teeth and Alveolar Processes as Points of Entrance for the Tubercle Bacillus—Frederick Moorehead, Chicago.
12. The Close Relations Between the Dentist and the Physician—Bertha E. Bush, Chicago.
13. A Review of the References to Oral Conditions in a number of Standard Text-Books on Surgery—Arthur D. Black, Chicago.
14. Conservation of General Health in Children Through Overcoming the Inclination Toward Nasal Stenosis by Means of Widening the Maxillary Arch—Nelson Black, Milwaukee, Wis.
15. The Influence of Widening the Palatal Arch on the Nose—Lee Wallace Dean, Iowa City, Iowa.
16. The Relation of the Teeth to the Development of the Face—Frederick Noyes, Chicago.

17. How Shall the Stomatologist Be Educated?—Eugene S. Talbot, Chicago.

18. Future Stomatological Education—M. L. Rhein, New York City, N. Y.
Thomas L. Gilmer, Chairman. Eugene S. Talbot, Secretary.

OHIO STATE DENTAL BOARD

The regular spring meeting of the Ohio State Dental Board will be held in Columbus on June 21-24 inclusive. All persons desiring to secure licenses should address the secretary and secure application. Applications must be returned to the secretary, with the fee of twenty-five dollars ($25.00), not later than June 11th.

For further information and blank application address L. L. Yonker, Secretary, Bowling Green, Ohio.

OREGON STATE DENTAL ASSOCIATION.

The Seventeenth Annual Meeting of the Oregon State Dental Association will be held at Portland, on June 30, July 1 and 2, 1910. Every dentist should mark these dates on his calendar and be sure to be there. You will learn more in these three days than in five years at home. You simply cannot afford to miss it. Write and say you are coming. W. C. Shearer, Secretary, 807 Dekum Building, Portland, Oregon.

IOWA BOARD OF DENTAL EXAMINERS.

The Iowa State Board of Dental Examiners will hold a meeting for the examination of candidates for license to practice dentistry in Iowa, beginning June 6, 1910, at 9 a. m., at Iowa City.

For blanks and other information, write E. D. Brower, Secretary, Le Mars, Iowa.

TENNESSEE STATE DENTAL ASSOCIATION.

The Tennessee State Dental Association will hold its forty-third annual meeting at Nashville, Tenn., May 17, 18, 19, 1910. All ethical practitioners are invited to attend. J. L. Manire, Secretary.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The semi-annual meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the State of Illinois will be held at The Northwestern University Dental School, corner Lake and Dearborn streets, beginning Monday, June 13th, 1910, at 9 a. m. The following preliminary qualifications shall be required of candidates to entitle them to examination by this board for a license to practice dentistry in the State of Illinois: Graduates of a reputable dental or medical school or college, or dental department of a reputable university, who enter the school or college as freshmen on or after the school year 1906-7, must have a minimum preliminary education of not less than graduation from an accredited high school, or a certificate from the State Superintendent of Public Instruction, equivalent officer or deputy acting within his proper or legal jurisdiction, showing that the applicant had an education equal to that obtained in an accredited high school; which certificate shall be accepted in lieu of a high school diploma. Candidates will be furnished with proper blanks and such other information as is necessary, on application to the Secretary. All applications must be filed with the Secretary five (5) days prior to date of examination. The examination fee is twenty dollars ($20) with an additional fee of five dollars ($5) for a license. Address all communications to T. A. Broadbent, Secretary, 705 Venetian Building.

IDAHO BOARD OF EXAMINERS.

The next regular meeting of the Idaho State Board of Dental Examiners, for examination of applicants, will be held at the State House, Boise, Idaho, beginning June 15th.

Applications must be in the hands of the secretary at least five days before the examination, and should be addressed to J. B. Burns, Secretary, Payette, Idaho.

INDIANA STATE DENTAL ASSOCIATION.

The program for the fifty-second annual meeting of our association promises to be the best in our history. Every effort has been made to secure the very best talent in the profession for the essays and clinics. Among the essayists are Drs. R. Ottolungi, New York City; J. H. Prothero, Chicago; E. C. Mills, Columbus, Ohio; J. G. Carmichael, Milwaukee, Wis.; George Wood Clapp, New York City, and others from our own State. Dr. W. E. Kennedy, Supervisor of Clinics, has secured over fifty clinics, and a new feature will be clinics each afternoon of the meeting.

Please notice that the meeting will be held this year May 17-18-19. Mark off these dates—NOW. Otto U. King, Secretary, Huntington, Ind.

LAKE ERIE DENTAL ASSOCIATION.

The forty-seventh annual meeting of the Lake Erie Dental Association will be held at Bartlett Hotel, Cambridge Springs, Pa, May 17, 18, 19, 1910. All reputable practitioners are cordially invited to attend. V. H. McAlpin, Secretary.

WASHINGTON STATE BOARD OF DENTAL EXAMINERS.

Kindly announce in your paper the date of the next meeting of the Washington State Board of Dental Examiners as May 26th, 1910, the meeting to be held in Seattle. Wm. B. Power, Secretary.

ARKANSAS STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the Arkansas State Board of Dental Examiners will be held June 6 and 7th, in Little Rock. All applicants are required to pass an examination, making a general average of 75%, with or without diplomas. The examination covers all branches taught in the Dental Schools. The examination is theoretical only. No temporary license, no special examination. Fee $15.00. A. T. McMillin, Secretary.

CANADIAN DENTAL ASSOCIATION.

The bi-annual meeting of the National Dental Association of Canada will be held in Toronto May 31, June 1, 2 and 3, 1910. Papers and Clinics. We invite our American brethren and offer them all the privileges of the convention. Delightful temperature in June. Toronto is three hours from Buffalo, four from Muskoka or Georgian Bay, one night from the famous Cobalt and six hours from the Thousand Islands of the St. Lawrence. Come and join us. Single fare rates, upon certificate plan, over all of Trunk Line Territory. George W. Grieve, Sec. of Exec., 2 Bloor St. East, Toronto, Can.

RE-UNION AND CLINIC

The annual re-union and clinic of the Alumni Association, College of Dentistry, University of California, will be held on Monday, Tuesday and Wednesday, May 16th to 18th. The Clinics will be given at the Infirmary of the College of Dentistry on Monday, May 16th. Tuesday and Wednesday will be given over to the general celebration of the Golden Jubilee of the University and the Commencement exercises.

NEW YORK DENTAL HYGIENE CONFERENCE

A dental hygiene conference and exhibit will be held at the Metropolitan Building, New York City, May 12th to the 18th inclusive, under the auspices of The Dental Hygiene Council of New York City, with the co-operation of the Children's Aid Society, the Association for Improving the Condition of the Poor, and the Charity Organization Society. The exihibit will be open every day including Sunday, May 15th.

Arrangements are being made for the holding of a stereopticon lecture on dental hygiene every afternoon of the week at four o'clock, and twice on Saturday for school children.

The conference will be held evenings, and will be addressed by well known speakers such as: Woods Hutchinson, C. Ward Crampton, J. J. Cronin, S. Josephine Baker, Jane Robbins, Roy Smith Wallace, Wm. H. Allen and others.

The exhibit and all meetings are open to the public. It is hoped that every dentist in the vicinity of New York will try to visit the exhibit and be present at as many of the evening meetings as possible, also that they will urge such attendance upon their patients. Programs may be had later upon application. Arthur H. Merritt, Chairman of Committee, 59 West 46th Street.

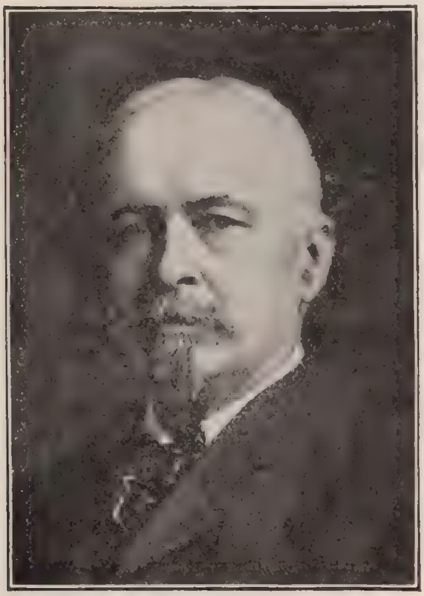
NEW OFFICERS FOR THE SOUTHWESTERN MICHIGAN SOCIETY

The newly elected officers of the Southwestern Michigan Dental Society who were chosen at the annual meeting held at Coldwater, April 12 and 13, 1910, are as follows: President, Dr. R. A. Bowie, of Three Rivers, Mich. Vice President, Dr. J. H. Rockwell, of Battle Creek, Mich. Secretary and Treasurer, Dr. R. E. Patterson, of Coldwater, Mich. The next annual meeting of the Society will be held the second Tuesday and Wednesday in April, 1911, at Battle Creek, Mich.

THE SUSQUEHANNA DENTAL ASSOCIATION

The enterprising Publicity Committee of this Association is leaving nothing undone to make the next meeting at Hotel Oneonta, Harvey's Lake, Pa., May 24, 25 and 26, the biggest success in the history of the Association. Arrangements have been made with some thirty manufacturers who will send their best exhibits, the list of clinicians is large and composed of able men, while the place of holding the meeting—insuring an abundance of good food, good mountain air, fine scenery, etc., is all that the most exacting could demand. A large and enthusiastic meeting, full of good things and good fellowship, is confidently anticipated. This is a convention year anyhow; we look for the largest attendance and most interesting sessions ever known. If you are not a member of an association, "now is the accepted time." You can learn more at a convention in a day than at home in a year.

OUR LECTURES AND OUR LECTURER.



John Worthington Dowd, LL. D.
Our Lecturer.

We are now ready to fix dates for lectures before Teachers' Associations, public schools and the public generally, and request correspondence looking to this end from dental societies and individual dentists in Ohio, Michigan and Indiana.

For this work we have secured the services of John W. Dowd, LL. D., an educator and lecturer of force, ability and wide experience. Mr. Dowd has made a careful study of all branches of the subject of dental education, and is prepared to present them in a popular, interesting and convincing manner.

The lectures are illustrated by a large number of accurate and beautiful slides, made from photographs of subjects supplied by some of the ablest men in the profession, thrown on the screen by the finest stereopticon (Bausch & Lomb) possible to procure, and are presented in a manner sure to please and instruct the average audience.

The co-operation of every dentist within the territory mentioned, who is interested in the great cause of popular education, is most earnestly invited.

In reply to many questions as to the expense, necessary arrangements and other particulars, we have formulated the following:

Things That We Will Do.

We supply the lecturer, the lecture, the lantern and the slides.

We supply press notices and cuts for advertising the lectures in local newspapers.

We supply circulars and tickets for distribution to school children, parents and others, advertising the lectures and creating popular interest.

We pay our lecturer for his services and all of his expenses, including his hotel bills. No part of this expense is asked from dentists, nor will any be accepted.

Things For Dentists to Do.

Form a local organization, including as many dentists as possible, and appoint a small committee to look after the part of the work that we cannot do. Do this at once.

The purpose of this committee is to make all necessary arrangements.

Get co-operation of school board.

Arrange approximate date.

Secure and pay rent of hall.

Arrange to have teachers distribute printing and tickets among their pupils. These tickets are free, of course, and admit the entire family. Establish a few centers where tickets may be obtained.

Arrange for use of electric current and have proper connection made.

See that lecture is well advertised in local papers and announced by teachers daily until date of lecture.

See that no dentist makes himself prominent in the work, assumes credit, or secures any personal advertising.

Furnish man to assist our lecturer, operate lantern, etc., at time of lecture.

Furnish a table not less than 24x42 inches in size and 3 ft. 6 in. high.

As soon as committee is appointed and at least part of the work is done, write us, giving us:—

Name of chairman of committee.

Size of the hall.

Seating capacity of hall.

Number of pupils in the public schools.

Kind of electric current, whether direct or alternating. State whether current is available in daytime. Give voltage.

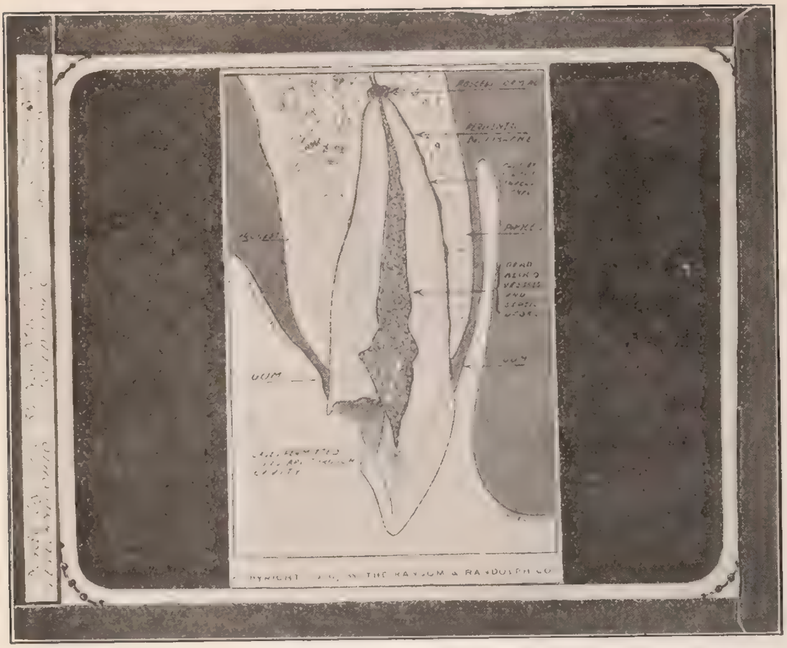
When lecture is wanted, giving approximate date.

The Ransom & Randolph Co. is not to be referred to nor connected with these lectures in any manner. When necessary to explain their origin, say they are backed by a magazine called The Dental Summary.

As soon as we hear from local committees we will complete arrangements and proceed with our part of the work.

Now—all together, for the common good. Address

Educational Bureau,
The Dental Summary,
Toledo, Ohio.



Lantern Slides for Educationa Work

In response to a ve real and earnest dema from many readers w are interested in t great educational mov ment, we have fitt ourselves for the man facture of slides and now prepared to sup the following at the iform price of 50 ce each, except color subjects. which are $1. each. Slides are m to order only. T must be allowed af orders are received.

All slides are 3¼ and will fit any stand American-made stere ticon.

LIST OF SLIDES (In ordering always specify class and number.)

Class A—Anatomical.

1—Skull at birth.
2—Skull at nine months after birth.
3—Tooth formation at about eleventh month.
4—Tooth formation at about eighteenth month.
5—Tooth formation at about three and a half years.
6—Tooth formation at about 6 years, front view.
7—Tooth formation at about 6 years, side view.
8—Tooth formation at about seventh year.
9—Tooth formation at about eleventh year.
10—Tooth formation at about thirteenth year.
11—Adult mouth with all teeth in place.
12—Jaw in old age.
13—Nerves and blood vessels of teeth, front view.
14—Nerves and blood vessels of teeth, side view.
15—Facial distribution of fifth pair of nerves.
16—Veins and arteries.
17—Alimentary canal.
18—Skull with perfect set of teeth.

Class B—Sectional Views.

(Colored Subjects $1.25 each.)

1—Perfect tooth, process, gum and lip in color.
2—Tooth, process, gum and lip in colors, showing beginning of caries.
3—Tooth, process, gum and lip in colors, showing same decay as in B-2, but further advanced, and formation of abscess and pus.
4—Tooth, process, gum and lip in colors, showing same cavity as in B-2 and B-3, pus escaping through fistula.
5—Tooth, process, gum and lip in colors, showing abscess cured and tooth filled.
6—Sections of three molars and occlusal surfaces, showing progressive caries.
7—Diagram of eight upper and eight lower perfect teeth with diagramatic occlusion.
8—Section of perfect tooth, showing vascular and nervous circulation.

Class C—Malformations and Restorations.

1—Profile of girl's face before regulation of teeth, showing effect of extraction of sixth year molar.
2—Profile of cast of C-1 before regulation, showing effects of extraction of sixth year molar.
3—Same as C-1 after regulation.
4—Same as C-2 after regulation.
5—Profile of girl's face with mal occlusion as a result of thumb sucking and of same girl with malocclusion corrected.
6—Child showing malocclusion caused by sucking three fingers. (20 pounds gained during treatment due to restoration.)
30—Profile of King Alphonso of Spain, showing effects of malocclusion, undershot.
31—Profile of Queen Victoria of Spain, showi effects of malocclusion, overshot.
50—Appliance for prevention of mouth brea ing during sleep.

Class D—Bacteria.

1—Pericementitis Baccili.
2—Pneumococci.
3—Mouth Baccili.
4—Tooth Decay—Caries Baccili.

Class E—Cleaning of Teeth.

1—Cleaning outside of upper front teeth.
2—Cleaning inside of upper front teeth.
3—Cleaning inside of upper side teeth.
4—Cleaning outside of lower front teeth.
5—Cleaning inside of lower front teeth.
6—Cleaning inside of lower side teeth.
7—Cleaning inside of side teeth.
8—Drawing showing effects of horizo brushing of teeth.
9—Hygienic outfit—brushes, powder and f
10—How the brushing of the teeth is taugh some schools.

Class F—What Dentistry Can Do.

1—Restoration of broken down roots.

Class G—Miscellaneous Slides.

1—"It didn't hurt a bit."
2—List of teeth (temporary and permane showing years when due.
3—Chart showing want of masticating po in 80 per cent. of children at 12 years
4—Cast showing effects of extraction of s year molar.
5—Examining school children's teeth in a cinnati school.
6—A tooth factory in operation—night vie
7—A tooth factory with part of 500 employ
8—
9—Crying child (toothache).
10—Same child as in G-9, but laughing.
11—Interior of modern dental office.
12—Interior of modern dental office.
13—Interior of modern dental office.
14—Cast, showing beginning of decay.
15—Cast, showing decay further advanced
16—Cast, showing decay still further adva
17—Cast, showing decay still further adva
18—Cast, showing ravages of decay.
19—Drawing, showing advanced stage pyorrhea, upper jaw.
20—Drawing, showing advanced stage pyorrhea, lower jaw.
21—Drawing, a normal dentition at 7 years sected.
22—Drawing, a normal dentition at 7 y palatal view.
23—Drawing, a normal adult dentition.
24—Drawing, care of teeth—brushing and s

NEWS and OPINIONS

Results—Thus Far.

While mainly interested in planning and carrying out methods tending to bring about the widest possible spread of intelligence upon the important subject of the care and preservation of the teeth and the conservation of health and mental development resulting therefrom, we cannot but be gratified to note results as we go along.

Since the beginning of our campaign for popular education, free dental clinics and dispensaries have been established or are on the eve of being established, in the following towns and cities:

Cleveland, Ohio.
Somerville, Mass.
Massillon, Ohio.
San Francisco, Cal.
Watertown, N. Y.
New Orleans, La.
Newark, N. J.
Boston, Mass. ($2,000,000 donation).
Spokane, Wash.
St. Louis, Mo.
Newton Centre, Mass.
Cincinnati, Ohio.
Birmingham, Ala.
Dayton, Ohio.
Danville, Pa.
New York City. (Several added to those already established.)
Revere, Mass.
Cambridge, Mass.
Cortland, N. Y.
Rochester, N. Y.
Binghamton, N. Y. (Supported by private philanthropy.)
Memphis, Tenn.

There are, doubtless, many others that have not been reported, and we shall thank dentists everywhere to send reports of examinations, the establishment of clinics and dispensaries, and any other items of interest bearing upon the great work.

Politics and the Public Schools.

I have been unable to find in more than a few States a condition of affairs anything like moderately ideal. This is largely due to the fact that the smaller political units which raise the taxes insist on having a preponderant influence in everything affecting the schools. It is only recently that there has been a decided improvement in this respect. Pennsylvania has taken a long step forward by preparing an excellent code. It failed of passage, but some reforms are sure to follow.

What seems most essential just now is that we be able to get the best teachers for the public schools, since on them depends more than on any other factor in the situation. When teaching becomes an honored and well paid profession its claims of localities will cease. Teachers will be selected according to merit, without regard to residence. In Germany mayors are hired just as here railway presidents are secured. The cities go where they can get the best talent. The mayor of Berlin, whose salary, all things considered, is greater than that of the President of the United States, was hired from a small city in the southern part of the Empire. To an extent, that system prevails now in the higher grades of teachers in the public schools, but it is still a lamentable fact that the great majority of primary and grammar school teachers in the country depend upon some influence or political pull to secure and maintain a position. This evil is growing somewhat less, but it ought to be abolished. It is a reform that need not wait a moment.

—From ‘‘What is Wrong With Our Public Schools,’’ by Joseph M. Rogers, in *Lippincott's.*

No Reciprocity in Maine.

‘‘The board of dental examiners of the State of Maine have no power whatever to enter into reciprocal arrangements with dental examining boards of other states whereby a certificate issued by another state would stand in lieu of the examination which the law requires to be made under the statute as it now stands upon the books,’’ states Attorney General Warren C. Philbrook of Waterville in an opinion handed down April 4.

The opinion was rendered at the request of Dr. Langdon S. Chilcott of Bangor, president of the Board of Dental Examiners of the State of Maine, and Attorney General Philbrook's letter to Dr. Chilcott bearing on the matter.

Dentists Not Tooth Pullers.

In speaking of the Houston (Texas) convention to be held in May, one of the newspapers referred to dentists as "tooth-pullers." This appellation was promptly resented by the secretary-treasurer of the Houston society, who wrote to the editor as follows:

In your article this morning giving account of the conventions of dentists to meet in Houston in May your headline writer refers to the dental profession as "tooth pullers." This reference we as dental practitioners consider as an attempt on the part of some person not well informed on the standing of professional occupations to cast reflections on our profession—a profession second to none in the world.

The dental profession dates far back into the ages, though from its incipiency, I venture to say, has relieved more numbers of suffering humanity than any other profession. It requires education, experience, skill and knowledge in all the branches of medicine and surgery of the general practitioner to make a successful dentist. Dentistry is a special branch of the medical profession, and I want to say that it requires more skill and ability to devitalize (kill) a pulp (nerve) of an affected tooth and still retain that tooth in good condition than it does to perform the many so-called wonderful operations in general surgery. We do not practice dentistry—we perform dental operations that are wonderful and of lasting benefit to humanity, and few people know that it was a dentist that first gave to the world and the medical profession that great boon to mankind, the general anesthetic. To refer to us as "tooth pullers" is to place our profession in the same category as the "leg puller," etc., and to refer to a dental surgeon or doctor of dental surgery as a "tooth puller" is to offer an insult to his learning and skill in the practice of the most important branch or specialty of medicine.

It is not the purpose or practice of the honest dentist to "pull teeth." It is his duty to save them. A good tooth of nature's production is worth a hundred artificial ones. Artificial teeth are very good substitutes for the natural ones, so is the wooden leg a very good substitute to the unfortunate cripple. The trouble is that the larger percent of the people do not appreciate the importance of their teeth until it is too late. They wash their hands, face and body daily, but a very small percentage attend to their teeth until they give them pain and then it is to some dental office to have them extracted.

It is not my purpose to infer that the writer of those lines really intended to offer offense to the dental profession, but it is my purpose to call his attention and others to the fact that we are not "tooth pullers." T. W. Dee,
Secretary-Treasurer Houston Dental Society.

Paris Monument to Wells.

In the presence of a distinguished gathering of scientists, representatives of the Government, Parliament, and the municipality, and delegates from dental societies in Europe, a monument to Horace Wells was unveiled March 27, with fitting ceremony in the Place des Etats Unis, Paris, France. Wells was born in Hartford, Conn., in 1815, and was a pioneer in the use of nitrous oxide gas in dental operations. He committed suicide in New York in 1848.

The American embassy was represented at the function by Arthur Bailly-Blanchard, first Secretary. Addresses were made by Deputy Georges Berry, Prof. Dastre of the Academy of Sciences, who dwelt on the scientific value of Wells's work, and Dr. Jenkins, President of the American Dental Club in Paris, who expressed the gratitude of the American people "to generous France, which was the first to acknowledge the importance of his discovery and to comfort the man in his last sad days, which now raises an enduring tribute to his memory."

M. Quincenot, chairman of the committee, presented the monument to the city, and it was accepted by M. Miniot, Vice President of the City Council. M. Boutee was the sculptor of the monument.

OBITUARY.

Resolution on the Death of Dr. F. S. Casper.

Whereas, the Supreme ruler of the universe in his infinite wisdom saw fit to remove from our midst (on Feb. 12) our professional brother Dr. F. S. Casper,

Whereas, we humbly bow in submission to the wisdom and will of Him who doeth all things well, we respectfully submit the following resolutions:

Resolved, that Dr. Casper did exemplify by his acts in his life the truest principles of noble manhood, that he was an honor to his chosen profession, careful, cautious, efficient and wise in the performance of his duty, looking to the best interests of humanity, ever ready and willing to the extent of his ability to aid his fellowman in distress,

Resolved that a copy of these resolutions be spread upon the minutes of the

Southwestern Dental Association books, a copy sent to his family and copies sent to the Texas Dental Journal, Practical Dental Journal, American Dental Journal and the Dental Summary.

F. W. Smith,
W. R. Weber,
J. D. Simms,
Committee.

Charges Against Washington Dental Board Sustained by Probe Committee.

A legislative committee appointed to investigate charges filed by Dr. E. J. Brown, of Seattle, Wash., against the Dental Board of Examiners of that State, has made its report, sustaining the charges. The committee finds:

That the statute creating the dental boards makes no provision for the examination of applicants in any certain subjects relating to dentistry, and confers on the dental board unlimited powers as to the scope of the examinations to be given. The committee feels that the best interests of the state will be subserved by an amendment to the dental law, prescribing the subjects in which applicants shall be examined and the qualifications necessary to pass such examination.

That the proceedings of the various dental boards have not been open to public inspection, as provided in the statute, and that applicants taking examinations have been denied access to the papers, records, and files of the dental board, and that the secrecy maintained has given rise to criticism and suspicion which has brought the state dental board into more or less disrepute.

The committee, therefore, believes that amendments to the dental law should be made requiring the board to keep permanent records of all its proceedings, open at all times to public inspection, together with records showing the grades given applicants in all subjects, which shall be open at all times to the inspection of such applicants.

That the dental board in at least one case demanded and received the statutory fee of $25 for an examination which was not given, and later issued a license to the applicant based upon his grades in an examination six months prior thereto.

The committee considers this unwarranted and reprehensible conduct on the part of the dental board, and mentions this case as additional evidence of the arbitrary and unlimited powers exercised by the board under the present law.

That the dental law provides that the members of the board shall receive $5 per day while actually engaged in the duties of their office and all legitimate and necessary expenses incurred in attending to the duties of the board. The financial report for the year 1908 and 1909 presented to the governor shows that each member of the board has charged and received, in addition to $5 per diem allowed by law, railroad fare to and from his home to the place of holding examinations, as well as a flat rate of $5 per day to cover expenses. Such practice should be condemned, as in the judgment of the committee it is a violation of both the letter and spirit of the law.

That the charge alleging conspiracy, fraud and collusion between the dental board and the state dental society was not sustained by the testimony introduced.

"Lectures on General Anæsthetics in Dentistry," by William H. DeFord, B. A., D. D. S., M. D., M. A., Dean of Dental College, Drake University, Des Moines, Ia. The Ransom & Randolph Co., Toledo; Cloth, $1.00.

This work has been pronounced by able men the best and most valuable work on the subject ever written. Its 22 chapters abound in solid, practical and dependable suggestions and instructions. A full review will be printed next month.

Dr. G. V. Black Awarded Miller Prize in Paris.

New honors have been heaped upon Dr. G. V. Black of Chicago. He was recently informed that he has been awarded the Miller prize by the International Dental Federation, which met in Paris recently. The prize is named in honor of Willoughby D. Miller. Some time ago the International Dental Federation started a fund with which to give appropriate recognition of high attainments in scientific dentistry. Dr. Black is the first to receive this honor and that he both deserves and appreciates it goes without saying.

The Memphis Dental society, at their regular meeting March 26 elected the following officers: Dr. D. M. Cattell, president; Dr. G. E. West, vice-president; Dr. J. L. Manire, recording secretary and treasurer; Dr. E. W. Taylor, corresponding secretary.

Only 16 of the 65 applicants passed the examinations held by the Massachusetts board of registration in dentistry on March 2, 3 and 4. This was the smallest number yet admitted to practice the profession by the board at one examination.

Have You An Aim In Life?

Life may be compared to a voyage—is often referred to rather poetically as the ‘‘Voyage of Life;’’ and there is more truth than poetry in the comparison. There is much in the average life to warrant it: Storms and calms, pause and progress; and, to complete the correspondence, every life should have some definite aim, should be shaped in some particular direction.

What would we think of the captain of a ship who would heave anchor and hoist sail without knowing or caring to know anything about his destination—without a definite port to which to sail? Yet, is it not true that the average man and woman is doing just that with Life, a far more transcendantly important thing than a mere voyage across the ocean, no matter how long?

Most of us are living an objectless life, merely living from day to day, a life concerning itself only with the things of the moment—with eating, drinking, sleeping; with acquiring things that we do not need and really do not want once they are acquired.

A writer in The Pathfinder, Washington, so aptly expresses the thoughts of the present writer on this and kindred topics that space is taken to reproduce the article, which follows:

The world is busy enough—far too busy, for its busyness is mostly of the kind which accomplishes nothing. Society is on a merry-go-round; there is no question that it is lively and that its rate of speed is high—dangerously high in some cases—but it gets nowhere, it makes no progress, because its activity is of the rotary order, and its energy is all used up in going through motions for the sake of the motions.

So active, so full, so compelling is the modern life that few ever get time or take time to ask themselves what it's all about. If they did they would soon realize how flat and unprofitable it all is. The dizziness of the dance makes the dancers forget that anything else exists or that there is such a thing as the future.

We don't mean by this that people should be sour and pessimistic; there's no virtue in a long face; on the contrary, the voyage of life should be a merry one; like good sailors we should sing at our work and always be ready to beguile the drudgery and dullness of the hour with a good yarn. But we also ought to give more thought to the object of the voyage. Having a purpose in life ennobles us.

Look as an observer from Mars would on the life in your own community. There is wonderful activity in evidence; prosperity seems to reign; people are killing themselves with work—but what is the net result? Are those men and women free, or are they slaves? Are they laying up any capital of power, are they making any spiritual progress—the only kind of progress that counts in the end? Or are they merely going round and round in a busy, dizzy whirl?

If you want to get forward, ask yourself the same question. If you find you're in a rut, make a heroic effort and get out of it.

Be your own judge as to what is worth while in this all-too-short life of ours; think for yourself what you are here for; choose some port of destination, and then make for it; steer clear of the whirling maelstrom as well as the stagnant saragossa sea; keep straight ahead on your course, and you'll get there. If others would do as much, the problems of this world would soon solve themselves.

The Dental Summary is indebted to Dr. G. W. C. Hadley, Seattle, Wash., for a copy of The Metropolitan Bulletin containing a very fine illustration of the new Cobb building recently erected in that city, and which will be ready for occupancy May 15, which is to be occupied exclusively by dentists and doctors. The building is a handsome structure of stone and brick, has a fine open lobby finished in mahogany and marble, is splendidly located, and has already enough space rented to insure its success as an investment.

Fresh Discovery of an Old Truth.

Helen's enjoyment of the party given in honor of her ninth birthday was nearly spoiled by the ill-tempered outbreaks of a very pretty and well-dressed little girl who was among her guests.

A peacemaker appeared, however, in a plain and rather shabby child, who proved herself a veritable little angel of tact and good-will.

After her playmates were gone, Helen talked it all over very seriously with her mother. She summed it up in this piece of philisophical wisdom:

‘‘Well, I've found out one thing, mama. Folks don't always match their outsides.’’—*Woman's Home Companion.*

Governor Mann, of Virginia, March 22 appointed Dr. A. Hume Sprinkel, of Staunton, as a member of the State Board of Dental Examiners. Dr. Sprinkel succeeds Dr. B. Bridgeforth, of Richmond, who has resigned.

Man's Three Duties.

I have made a code for my own guidance which may interest you. I hold that a man's first duty is to be a good husband, and make his wife believe, if he can, that she has been the most fortunate of women.

It isn't easy, but my, how it pays!

He must be Lover, Husband, Son, and even Father by turns, and occasionally just nobody—he must get clear off the earth; but when he comes back—

A man's second duty is to be a good father, which implies, of course, that he ought to have children, adopted, if necessary. He ought to be to them the standard by which all other men are measured and found wanting, because he is their daddy and they love him.

A man's third duty is to be a good neighbor; to carry his share—no matter how small or how great it may be—of the community's worthy enterprises; to share the sorrows and the joys of those around him; to make himself a real asset to his community.

After a man has done these three things, if he has time and means and strength, he can and should think in wider circles. But the man who does these three things well is doing more than if he contributed millions and neglected these three. The man who neglects his wife or his children or his neighbors, no matter what other apparently great things he may have done, will hear Gabriel's trumpet very faintly, if at all, on the morning of the Great Day.—Erman J. Ridgway in *The Delineator* for May.

What Knowledge Really Is.

When "Josh Billings" said, "It's better not to know so many things than to know so many things that ain't so," he crystallized one of the greatest truths of all philosophy. I wish that he could be called back to squeeze into another sharp-pointed little bur for the memory the fact that it is less important to know things than to know how to learn things. Knowledge ought not to be thought of as building a prison about the mind, but as tearing down old jails and letting the sunlight into dark places. Wisdom is not walls but wings.—*The Delineator.*

The Case Against Meat.

The schemes of "civilization" to put food materials (mixed with some materials that are not food), through various complications that greatly increase the price and hence the profit to the mixers, and that capture trade by putting out a product that has a different appearance, color, odor or taste from the same thing in a less expensive form are entirely based upon our anthropoid curiosity.

In the case of meats, for instance, the farmer takes grain worth a cent and a half a pound and feeds it to a steer who completely consumes fourteen out of fifteen pounds of it, and deposits in his carcass together with the fifteen pounds of grain, two pounds of water. Now this steer the farmer sells to the packer at a rate high enough to pay for all his feed, labor and the loss from animals that did not thrive. Next the packer turns forty per cent of this steer into fertilizer and fusses and fixes the rest of it up and passes it on to us through the hands of a dozen storage men, wholesalers and retailers; finally, it reaches the consumer a pitifully meagre share of the original food grown on the farm, and hopelessly loaded with the product of the steer's physiological economy and the packer's chemical laboratory.

When one considers the waste and folly of the whole proceeding, instead of being surprised that meats are high, he wonders that they are so low.—From *Physical Culture.*

Deaths.

Feb. 7—Dr. Wm. F. Teeter, of Chambersburg, Pa., age 56 years, died of acute indigestion.

March 11—Dr. D. A. Caulkins, of New London, Conn., died from heart trouble.

March 11—Dr. Frank Satterlee, of La Grange, Ill., died from a bilious attack.

March 16—Dr. V. H. Hobson, of Richmond, Ky., met his death by falling from a loft.

March 19—Dr. J. J. Cornelius, of Chicago, Ill., age 57 years, died of blood poisoning, due from contact with an ulcerated tooth.

March 18—Dr. Charles Mermillod, of New Orleans, La., death was due to paralysis.

March 19—Dr. A. J. Sawyer, of Cambridge, age 70 years, cause of death, pneumonia.

March 28—Dr. F. C. Briggs, of Cleveland, O., died suddenly of old age.

March 29—Dr. James Gregory, of Brooklyn, N. Y., died of heart trouble.

March 30—Dr. James W. Curtis, of Brunswick, Me., died following an operation for appendicitis.

March 31—Dr. James Marple, of Sherrard, W. Va., age 45 years.

March 31—Dr. Justus Crane Burroughs, of Bedford, O., age 86 years.

April 3—D. U. P. Pirece, of Haverhill, Mass., died of pneumonia.

April 4—Dr. Geo. E. Layton, of Paterson, N. J., died of heart trouble.

April 7—Dr. L. A. Nearing, of Syracuse, age 86 years.

Intestinal Elimination and its Importance to Successful Dentistry.

Metchinkoff's great studies of the auto-intoxications have stimulated investigations that bid fair to prove of the utmost importance to the human race. Coincident with better realization of the dangers of intestinal putrefaction more attention has essentially been given to elimination. To the dentist the subject is of more than ordinary importance, for while his work has largely to do with prophylaxis in some of its most effective phases, he cannot ignore the frequent necessity of using measures capable of removing the effects of the causes he is able to overcome.

Among recent remedies brought forward for accomplishing intestinal elimination, and, what is often of even greater importance, the removal of certain local intestinal conditions contributory to, or the result of the bowel stasis, Prunoids unquestionably stand first. This unique combination of phenolphthalein with cascara, de-emetinized ipecac and prunes has been found an evacuant of exceptional value. Its effect is prompt and certain, with none of the iniquities of usual laxatives and cathartics. Prunoids do not gripe nor occasion the slightest discomfort, yet produce the most copious movements. Most valuable of all, however, is the tonic effect on the intestinal glands and muscular tissue that follows their systematic use. Unlike most cathartics the reactionary effect never tends to increase the constipation. One effective dose is often followed by regular movements for several successive days, and used routinely, in the absence of organic causes, gradual diminution and at last complete cessation of the remedy is always possible; in other words a more or less permanent correction of the constipation is an almost invariable result.

Such a preparation, with its broad field of satisfactory application, cannot fail to appeal to the dentist. To satisfy themselves of the exceptional clinical value of Prunoids, dentists are urged to write for samples to the Sultan Drug Company, St. Louis, Mo.—Adv.

Ohio State Dental Examining Board.

A reorganization of the Ohio State Dental Examining Board took place April 9, 1910. Dr. F. H. Lyder, Akron, was elected president; Dr. L. L. Yonker, Bowling Green, secretary; Dr. H. C. Matlack, Cincinnati, treasurer. Dr. A. Bartilson, Columbus, is the new member appointed April 8th by Gov. Harmon, to succeed Dr. F. R. Chapman whose term expired April 6th.

Dies in Dental Office.

After having 14 teeth extracted Mr. W. L. Woodhouse, of Whitinsville, Mass., died in the office of Dr. Geo. B. Magrath. Physicians say his death was due to heart trouble.

Dies After Tooth Extraction.

Extraction of two teeth caused the death of John Nequist, of Muskegon, Mich. Physicians say he had a weak heart, and the pain of having the teeth removed acted upon the organ so as to cause paralysis.

Dr. R. A. Tate, formerly of Burnside, Ky., has moved to Coffeyville, Kansas, having bought out Dr. Lawrence at that place.

ROBBERIES.

March 8—Dr. H. J. Crone, of Springfield, Mo., dental material to the amount of $130.

March 21—Dr. W. H. Watkins, of Oakland, Cal., $25 worth of plate and scrap gold.

March 21—Dr. T. F. Richards, of Janesville, Ill., $50 worth of gold and dental supplies.

March 23—Dr. J. E. Kreft, of Albuquerque, N. M., $80 worth of gold used in filling.

March 24—Drs. F. F. Delisle, D. W. Whipple, of Houston, Texas.

March 24—Dr. S. S. Burt, of Bradford, Pa., $20 worth of gold.

March 26—Dr. J. T. Duncan, of Beaumont, Texas, $25 worth of gold and bridge work.

March 29—Dr. C. S. Eberly, of Lansing, Mich., $140 in bills and silver money.

April 2—Dr. A. L. Blaisdell, of Long Branch, N. J., a quantity of gold stolen.

April 4—Dr. H. G. Maize, of Mt. Carmel, Pa., gold and dental instruments to the amount of $150.

A New Mexican Victim.

Gallup, N. M., March 31, 1910.

Editor Summary:—I have noticed that each month you publish a list of dental offices that have been robbed—presumably so that the "next fellow" along the line will be on the lookout. Last night the lock was broken from my office door and gold plate, solder, foil and scrap gold to the amount of $125 or thereabouts was taken.

Very truly yours

W. D. CORNELL.

Proposed Charter Amendment.

State of New York, in Senate, February 11, 1910. The following proposed amendment was introduced by Mr. McManus—read twice and ordered printed, and when printed to be committed to the Committee on Affairs of Cities.

AN ACT.

To amend the Greater New York charter, in relation to the establishment of dental stations for the treatment of school children.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Title one of chapter nineteen of the Greater New York charter, as re-enacted by chapter four hundred and sixty-six of the laws of nineteen hundred and one, is hereby amended by adding at the end thereof a new section, to be section twelve hundred and thirty and to read as follows:

§ 1230. Dental stations for treatment of school children. It shall be the duty of the board of health of the department of health to establish and maintain dental stations at such place or places in the city of New York as the said board of health may select, at which all children up to the age of fourteen years attending any school in said city, who are unable to pay for the treatment herein provided for, shall receive the necessary care and treatment with respect to all defects of the teeth so far as the same may require extracting, filling or other treatment, and the said board of health shall supply such treatment as aforesaid by competent and qualified dentists to be employed by it; and the board of commissioners of the sinking fund of the said city of New York is hereby authorized and empowered to lease for the uses and purposes of the said board of health any building or buildings, place or places which may be required by the said board of health for the purpose of establishing such dental stations aforesaid. The board of estimate and apportionment of the said city of New York is hereby authorized and empowered to appropriate such sum or sums as may be necessary for the employment of the necessary dentists and other employees as may be required for carrying on the work hereby authorized and provided for.

§ 2. This act shall take effect immediately.

"Doctor, you've been coming here a long time and my husband is still helpless in bed. Do you think he'll ever sit up again?"

"Sure, he'll sit up when he sees my bill."

The Brightness of Halley's Comet.

The brilliancy of a comet as it appears to our eyes depends on two factors; first, its distance from the sun, and, second, its distance from the earth. The nearer to the sun the more does our sun act on the comet and increase its intrinsic brightness, and, of course, the nearer any body is to our eye the brighter will it be. Halley's comet is nearest the sun on April 20, when of itself it will be most luminous. But after that date it gets closer and closer to us till May 18. Immediately after that date the comet should be very brilliant, and it will be favorably situated in the evening sky for us to see it. The comet in 1835 was less bright than it had been in 1759, when it had a tail 50 degrees in length, not because it had intrinsically decreased in brilliancy but because the earth was unfavorably situated in its orbit to give us a near view. While nothing is known absolutely of how bright the comet will be, astronomers are generally agreed that it will be a splendid object readily visible to the naked eye, with a tail at least 30 degrees in length. In fact, the comet will be seen better without a telescope than with one, and for those who are not astronomers a look through a big glass would be disappointing.—*American Review of Reviews.*

A New Case of English Humor.

Two Southerners were entertaining an Englishman when one of them told the following story:

"There was a poor white in our county named Yarrow, whom every one thought dishonest, but who had never been caught stealing. At last he got too bold, and, through testimony of a Mr. Brown, he was sent to jail. Soon after Yarrow served his sentence, Mr. Brown was obliged to go to Baltimore and have his eyes operated upon. A much exaggerated account of the operation reached the county, and was told to Yarrow.

"I wish ter gracious," said that worthy, "that when the doctor took out that old Brown's eyes, he'd dropped 'em on the floor and the cat had got 'em!"

At the conclusion of the story, the other Southerner laughed heartily, but the Englishman was horrified. "Just think," he said, "of having a cat in the room when such a serious operation was being performed!"

Edward Payson Weston, who is now walking from California to New York, made 72 miles in one day a few days ago. This was his 72d birthday, and the veteran walker made a mile for each year of his life.

To Rid a State of Tuberculosis in Ten Years!

"No Uncared-for Tuberculosis in New York State in 1915!"

This is the watchword in the campaign for the prevention of tuberculosis in the State of New York. "No tuberculosis in 1920" is the hope. How the people of the Empire State have rallied for the fight against this disease in almost every city, village, and hamlet in that commonwealth in the short space of two years is a story that will doubtless be of interest to the citizens of every other State in the Union, for the crusade against consumption is not confined to the limits of any State or of any nation. This is because enlightened men and women throughout the civilized world are beginning to appreciate the full significance of Pasteur's words, "It is within the power of man to cause all germ diseases to disappear from the earth."

Already, in the way of education great strides have been made. He would be an ignorant person who could not recite these essential facts about tuberculosis:

Tuberculosis (or consumption) causes more deaths than any other single disease.

In the civilized world there are not less than a million deaths each year,—or two a minute,—which are due to this disease; in the United States this scourge claims no less than $200,000 of our citizens annually, and in the Empire State we sacrifice to it an average of 16,000 lives each year, or one every thirty minutes.

One-third of all who die between the ages of fifteen and forty-five, just at the time when they are repaying to society their debt for nurture and education, die of tuberculosis.

—From "No Tuberculosis in New York State in 1920!" by John A. Kingsbury, in the *American Review of Reviews.*

UNDER the trade name of "Orothyol," our old friends A. C. Clark & Co., Chicago, are putting on the market three dental preparations, a wash, a powder and a paste, manufactured under the supervision of Dr. G. W. Cook, Dean of the dental faculty, University of Illinois, which, from personal test, we can heartily recommend. They are put up in attractive packages, and in both taste and odor must appeal to the most fastidious. The wash is especially gratifying, leaving in the mouth that particular comforting feeling of cleanliness so much desired.

The steamer Kentuckian was christened at Sparrows Point, Md., a few days ago with water only, the long-customary bottle of wine or champagne being dispensed with in the case of this ship which takes its name from the state which is the home of "old Bourbon" and mint julep. The water used in christening the Kentuckian was taken from the farms of Abraham Lincoln and Jefferson Davis in Kentucky.

Suggestion Breaks a Rib.

Few of us indeed have failed to notice the effect which suggestion in many ways has upon us. For example, how often it is that when we see someone else yawn, we are immediately disposed to do the same thing, not from imitativeness, for we do the thing before we are aware that we are going to do it.

This influence of suggestion cost a man in Wilkesbarre, Pa., a broken rib a few days ago. Standing on the top of an eight-foot foundation, he saw a fellow-workman fall from the wall into a cellar. In an instant more the spectator had taken a tumble, too. The shock broke his right shoulder and a rib. He declares he cannot understand why he fell. Suggestion seems to be the only explanation.—*The Pathfinder.*

Cannon Et Al.

The political death of Joseph G. Cannon and the end of Cannonism seems now decreed. Speaker Cannon, when he found the sense of the house against him, should have retired gracefully. When he stooped to filibustering tactics he confessed the weakness of his tottering regime. He had always stood for the principle that the majority should rule and that the business of the nation should not be blocked by obstructionists. That rule is proper and necessary; we have always approved it and always shall, no matter what party or set of men may dominate congress. The men who are in charge of the ship of state are entitled to use their best judgment as to means and methods of doing things, so long as they hold the post, but when their commission is withdrawn it is their duty to yield the control of affairs to others. Otherwise they are usurpers. This is right where we draw the line. We will tolerate Aldrichism, Cannonism, Rooseveltism, or any other ism, so long as it stands for the prevailing will of the people, but no longer. "Uncle Joe" has been a first-rate hand at the helm in many ways; he is picturesque, if profane; he knows all the rocks and shoals and snags that beset the channel and he always gets the old hulk through on time, but he has grown a little too deaf to the public demand for improvements on the line. A change will be a good thing.—*The Pathfinder.*

CONTENTS

REGULAR CONTRIBUTIONS.

Care of the Mouths of School Children..............EUGENE S. TALBOT......517

Dental Inspection in the Public Schools..............HAROLD BARNES.......519

The Alimentary Canal Is Thirty-two Feet Long—You Control Only the First Three Inches of It. Control It Well..............WILLIAM H. SIEBERT....528

Dentistry for the Masses..............SIDNEY J. RAUH.........530

Report of Committee on Hygiene..............W. T. JACKMAN..........542

Opening of the National Campaign for Oral Hygiene—

Remarks..............G. C. ASHMUN...........545

Address of Welcome..............SUPT. W. H. ELSON......547

Response..............RICHARD GRADY.......548

Why We Need Oral Hygiene in the Public Schools..............J. W. DOWD.............552

Our Interest in the Work..............HENRY C. MUCKLEY....556

Importance of Lectures in the School Building....MRS. SARAH E. HYRE...558

The State Work..............W. T. JACKMAN..........559

The Local Work..............WESTON A. PRICE.......560

Some of the Difficulties We Have Encountered....J. P. CORLEY............563

Remarks on Oral Hygiene..............MYRON T. HERRICK.....568

Address of Welcome..............H. C. BAEHR...........571

Response..............BURTON LEE THORPE..572

Importance of Oral Hygiene..............W. G. EBERSOLE.........573

The Relation of Conditions of the Oral Cavity to the Health and Morals of School Children....W. A. EVANS.............582

Attitude of the State Government Toward Public Health..............H. C. BROWN............591

Attitude of The United States Government Toward Public Health..............C. W. WILLE...........593

SOCIETY ANNOUNCEMENTS

National Dental Association..............597

Kansas State Board of Dental Examiners..............600

American Miller Memorial..............600

National Dental Association..............600

Ohio State Dental Board..............600

The Georgia State Society..............600

To Attend National Conventions..............601

Michigan State Dental Society..............601

Wyoming Board of Dental Examiners..............601

CORRESPONDENCE

Casting of Large Bridges..............W. H. HAYDEN...........603

News and Opinions..............604

OBITUARY

Dr. J. Y. Crawford..............601

NEW PUBLICATIONS

Lectures on General Anesthetics in Dentistry.......WM. H. DEFORD.........602

To Correspondents: Send communications, exchanges, books for review, etc., intended for the Editor of Dental Summary, to Dr. L. P. Bethel, 1255 Neil Ave., Columbus, Ohio. Subscriptions and advertisements, send to the publishers.

THE RANSOM & RANDOLPH CO., TOLEDO, OHIO.

FREE SCHOOL CLINICS—CLEVELAND DENTAL SOCIETY

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX JUNE, 1910 No. 6

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society

and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. BETHEL, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address	District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.	Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple	Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland	D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Kansas City	Dr. Martin Dewey, Argyle Bldg.	Louisville	Dr. H. B. Tileston, Equitable Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.	Memphis	Dr. D. M. Cattell.
Los Angeles	Dr. B. Frank Gray, Security Bldg.	Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.	N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.	Richmond	Dr. F. W. Stiff. 600 E. Grace St.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"	New York City	Dr. W. H. Sieberst, 1 W. 34th St.
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.		

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, in U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

CARE OF THE MOUTHS OF SCHOOL CHILDREN

By Eugene S. Talbot, M. D., D. D. S., Chicago, Ill.

All things have their day. The enthusiasm with which dentists have aroused themselves to the fact that their aim in life should not entirely be given over to hunting cavities in teeth, filling them and waiting for new ones to appear is encouraging even at this late date. In this new departure, a consideration of school children's mouths, etiology and hygiene in connection with treatment should be given thought. What is needed at the present time is a knowledge of prevention of disease.

The care of the mouth of a child, under ten years of age, means more to the future welfare of the individual, both mentally and physically, than any other one thing. Healthy mouths mean healthy bodies and brains. Children started right in the first ten years of their lives will, in a majority of cases, become strong healthy men and women.

Body and mouth hygiene should constitute a part of the curriculum of the public schools. Every child should have this subject impressed upon him in connection with his early education so that the habit of cleanliness may be formed early in life.

Excepting intrauterine education and hygiene, the child when born, is, in a sense, a unit independent and free to work out his own sweet will. Intrauterine environment, however, has stamped itself for good or evil and the independent life is obliged to overcome the defects, should any occur, as best it can. Often the independent education, if it be of the right sort, will overcome the weaknesses and deficiencies, while on the other hand, a defective brain does not possess enough will power to offset the physical defects and the child succumbs to the weaknesses and degeneracy and death results.

The child from conception to the tenth year passes through three periods of stress. The first period of stress he is not accountable for, since he is under the influences of paternal and maternal environment; the second period of stress takes place with the eruption of the deciduous teeth and is therefore, controlled by the individual. The child is, to a certain extent, his own free agent at this period, yet he requires the assistance of professional skill to guide and direct his hygienic and anatomical welfare. Also at this period of stress, the alimentary canal as well as all the internal organs are undergoing marked changes. They are adjusting themselves to the food changes. All diseases to which children are subject are apt to occur at this period. A great deal depends upon these diseases and changes as to the future welfare of the mouth, jaws and teeth, if the child escape the baneful influences of the parents at the first period of stress. These diseases, constitutional in character, cause arrest in ontogeny resulting in undeveloped faces and jaws which in turn result in irregularities of the teeth. The mouth, therefore, should be kept in a strictly hygienic condition. The inflammation should be reduced and the germs which cause disease should be destroyed.

The third period of stress is ushered in by the eruption of the permanent teeth, between six and twelve years of age. Here irregularities of the permanent teeth, facial and nasal deformities including stenosis occur. A rule should be insisted upon that correction of a deformity should not take place until the teeth have erupted and the nature of the deformity can be determined.

In the treatment of the mouths of school children, the teeth should be a second consideration. The care of the mouth, gums and alveolar process is the all important part. We should remove the cause as far as possible and prevent tooth decay. The removal of bacteria from the mouth, reducing interstitial gingivitis from the gums and alveolar process will cause less tooth decay. By destroying the bacteria in the mouth, tuberculosis, pneumonia, diphtheria, inflammation of the fauces, tonsils, indigestion and to my mind many cases of appendicitis together with the eruptive fevers will be eliminated. Children with arrested faces, noses and jaws with irregularities of the teeth possess an unstable nervous system and should not undergo long tedious operations such as filling teeth with gold and regulating the temporary teeth. Such operations should be deferred until the second teeth are well in place and a fixed purpose can be relied upon.

In the treatment of the mouths of school children before any attempt is made to an examination, the gums and teeth should be thoroughly covered with iodo-glycerole. This will destroy all bacteria in the mouth and reduce the inflammatory processes going on in the gums and alveolar process. This treatment should be continued from day to day until the gums are restored to health and all bacteria are destroyed. A gum wash composed of the sulphocarbolates should be used by every child with a stiff gum massage brush twice a day.

Every time a patient comes into my office, they get an iodo-glycerole mouth bath before they leave. In this way the mouths of my patients are kept in a strictly hygienic condition. Between one and two thousand applications of iodo-glycerole are made by me every year. By so doing, I have reduced decay of the teeth in my practice from thirty to forty per cent.

Let hygiene of the mouth, then, be the first and principal thought and teaching of the dentist and the little patients will have less disease and decayed teeth as a result.

103 State Street.

DENTAL INSPECTION IN THE PUBLIC SCHOOLS*

By Superintendent Harold Barnes, Princeton, Indiana

THE modern public is rapidly growing into the habit of looking to the schools for reform measures of various kinds and, as regards the child, the modern school teacher is fast assuming the cares and responsibilities that once rested upon the parent. The child-study movement of the past few years has not only resulted in a scientific basis for the mental development of the child *per se;* but the physical development and the relation of the physical to the mental and moral phases of growth have received a large share of attention. A very appreciable per cent of the cases of the proverbially "bad boy" have been found upon examination to be the result of some physical disturbance or disease. When this physical disorder has been corrected the child very frequently becomes a different being. Diseases of the eye, the ear and the nose are perhaps the most prolific causes for lack of proper development, both mental and moral. Adenoid growths in the nose are responsible for very many cases of total or partial deafness.

---

*Paper read before the Southwestern Indiana Teachers' Association at Evansville, Indiana, November 27, 1909.

What a pity for a boy to be spoiled in the making when a little medical attention at the right time would make him normal or nearly so. Think of the responsibility resting upon parents and communities in this matter. The child is to be the future citizen and both the parent and the community should be vitally interested in the kind of citizens which they produce. Adequate medical inspection should be compulsory in every school or system of schools in the land.

Along with medical inspection should go proper dental inspection. When it is realized that a child's digestion as well as his temper and his general health depend largely on his teeth, it will be seen how important it is that the teeth should be properly cared for. An ounce of care and prevention at the present time is worth many pounds of toothache and of false teeth later. The number of parents who generally respond to suggestions regarding the health of their children is comparatively few and as far as the teeth are concerned little or no attention is usually given them until the toothache manifests itself. It is then frequently too late to save many of the teeth.

Investigations show that more bright children have good teeth than do dull children and that the average age of children with good teeth, in any grade, is less than that of children with poor teeth for the same grade. The chances of children with good teeth are, therefore, appreciably better for scholarship and promotion than are those of children with poor teeth.

Many diseases can be traced directly or indirectly to defective teeth. Among some of the diseases thus caused or specially aggravated are neuralgia, headache, earache, indigestion, heart trouble, enlarged glands of the neck, sub-acute blood-poisoning and various nervous disorders, including some cases of epilepsy. With these facts staring us in the face, is it not time that parents and school authorities take active measures to bring about proper inspection of children's teeth and thus not only save the teeth and much suffering but even many lives?

Let us have more dental inspection and more tooth brushes and we will have less suffering, less disease, and better and brighter boys and girls. Although dental inspection in the public schools is a comparatively recent movement, yet investigations into the condition of childrens' teeth were begun in Germany over thirty years ago. Odenthal, in Germany, in 1877; Ottofy, in Dakota and Illinois, in 1887; Pedley, in England, and Unghvari, in Hungary, in 1893, were some of the earliest investigators. Out of a total of 987 children examined, Odenthal found 72% with diseased teeth. Pedley examined 3,145 children with a total of 70,000 teeth and found 77.5% with defective teeth. He believed that the teeth of about two thirds of these could be saved by filling and was perhaps the first one to urge the appointment of school dentists for each school, with adequate pay for their services.

Later investigations have shown a larger per cent of defective teeth than were discovered in the earlier dental examinations. Out of a total of 19,725 children from 6 to 15 years of age, examined a few years ago by the association of dentists in Schleswig-Holstein, Prussia, 95% were found to be afflicted with caries. In Copenhagen, 97% among 10,000 pupils had defective teeth and in Halberstadt, out of 1,303 examined nearly 100% had caries. Among 5,300 children in the Peoples Schools in Rheydt, Dr. Kalewski found only 4.37% with perfect teeth; while in the Peoples Schools in Augsburg, investigations showed 99.41% with defective teeth. Investigations by Dr. Kielhauser, of Gratz, showed a percentage of from 67% to 82% and by Gawrousky, in the Gymnasien for Girls in Moscow, an average of from 90% to 97% with unsound teeth.

Out of a total of 497 school children of Andover, Massachusetts, examined under the direction of Superintendent Johnson, 96.9% were afflicted with caries. Only 9 girls and 6 boys out of the whole number were found with perfect teeth.

According to the report of the International Dental Congress at Copenhagen, in 1895, the number of school children suffering from defective teeth amounts in civilized lands nowhere to less than 80% and rises to 98.5%. This seems to be a conservative estimate for most localities today. The number given for different countries in Jessen's table is from 65% to 100%.

Investigations seem to prove that the higher the degree of civilization, the greater the number of defective teeth. Statistics have been gathered showing that of Eskimos, only 2.5% have defective teeth; of Indians, 3 to 10%; of Malays, 3 to 20%; of Chinese, 40%; while from 70 to 100% of Europeans and Americans have imperfect dentition. Modern food is generally given as the special cause for this last named condition.

It has been pretty well proven that the percentage of sound teeth among the children in a community is affected by the amount of lime in the soil. Investigations made by Dr. Rose of the teeth of school children in Baden and Thuringen showed that in the regions deficient in lime, 1.3% to 2% had perfect teeth, while in the regions rich in lime, from 17.2% to 21% had healthy dentition. In the districts rich in lime, the predominating color was a brilliant yellow; in the regions deficient in lime, a white-yellow or blue-gray.

The investigations by Superintendent Johnson proved that the percentage of children suffering from caries as well as the percentage of decayed teeth is correlated with the age of the pupils. He found that at the age of four, 29% of the teeth were decayed, at nine the percentage reached 41% and at fifteen, 43%. On account of the temporary teeth being replaced by the permanent teeth at about the age of eleven, only about 21% were found diseased at this time.

While, according to the observations of Hrdlicka and Johnson, the teeth of dull and feebleminded children compare favorably with those of normal children yet better success in school work on the part of normal children is indicated by Johnson's study. According to his report it was found to be true generally that the average age of children with good teeth, in any grade, was less than that of children with poor teeth for the same grade. The chances for better scholarship and promotion was in favor of the children with good teeth. A number of studies, including that of Johnson, also show that children with good teeth are appreciably ahead of those with poor teeth in physical development as shown by weight.

The conditions of school life have been proven to increase the number of defective teeth. Siterwood found that the teeth change in a few months after entering school. Magitot has pointed out the bad effects of continued study on the teeth. Galippe observed that preparations for rigid examinations in the last years of school life increased dental disturbances. It is thought by many authorities that overwork, depressed physical condition, over-stimulation of the brain and the use of phosphates by the brain which are needed for the teeth, are causes for an increase of disease.

The causes of diseased teeth are lack of nutrition—especially lime, and the presence of micro-organisms resulting from the lack of care of the teeth. A number of the micro-organisms form lactic acid which destroys the mineral substances of the teeth while others destroy the organic matter. The excessive use of sweets and of soft starchy food is bad for the teeth. Starchy foods are the more detrimental from the fact that, when acted upon by bacteria, lactic acid is produced.

The temporary teeth should be cared for, both because of the necessity of proper mastication and because diseased temporary teeth often cause decay of the permanent teeth. The notion that it is unnecessary to preserve the temporary teeth is a mistaken one. Normal temporary teeth are necessary in order to have normal permanent teeth.

Of special importance is the care of the sixth year molar. This is a permanent tooth coming in at the age of six and is generally confused with the temporary teeth. It is one of the largest and most important teeth in the mouth. So little is known by parents regarding this tooth that it is usually diseased before the seventh year. "Dr. Mary E. Gallup, of Boston, for several years gathered statistics of the sixth year molar in the mouths of native-born Americans. Of 3,000 Americans over 25 years of age, only seven had all four sixth year molars in the mouth."

"The indifference to the necessity of caring for children's teeth in civilized communities," says Dr. W. H. Burnham,* "would be amazing and incomprehensible unless we largely accept Lombroso's philosophy of laziness, that the law of inertia is the principle to which all human activity conforms. Sound teeth are essential to digestion, articulation, esthetic satisfaction, and general comfort. Every permanent tooth saved is better for a child than a hundred dollars in the savings bank. And yet parents make slaves of themselves to save a few dollars for their children and have not time to teach them habits of common decency in regard to dental hygiene; and when the paltry savings have been accumulated for the rainy day, the gold of Ophir cannot make the lost molars grow again, and it is good fortune if artificial teeth save their children from disease and speech defects. This indifference of the community to the importance of caring for children's teeth is so general that special measures should be taken to overcome it."

---

*Burnham, W. H. The Hygiene of the Teeth—Pedagogical Seminary, Vol. 13—No. 3, September, 1906.

Parents as a rule are too prone to look upon dental hygiene as unnecessary and to consider attention from a dentist as a luxury. Statistics showed some years ago that in Vienna, two-thirds of the dentists were in the aristocratic quarter and only one-third in the other nine districts. This is undoubtedly true in our own large cities.

St. Petersburg, Leipzig, Hamburg and a number of other European cities have had school dentists for a number of years. In some of these places the inspection has been done free of charge on the part of the dentists; in others it has been paid for by private individuals and in others the city officials have given assistance.

The important points emphasized by these studies of the teeth of school children and adults may be summed up as follows:*

1. Caries of the teeth seems to be a disease of civilization. At least observation and the somewhat meagre studies already made indicate that the disease is rare among primitive peoples.

2. It appears that usually from 80% to 100% of school children have diseased teeth. The estimate of the International Dental Congress referred to above is a conservative one, although where dental inspection has been introduced, and in some remote country districts, like parts of Siberia, there may be a smaller percentage.

3. A direct relation between the number of defective teeth and the amount of lime in a region seems to have been established by the investigations of Rose and others.

4. Among the causes of defective teeth the following seem to have been demonstrated: lack of nutrition, use of soft, starchy foods, use of sweets, as well as the lack of lime in the water, already noted. The immediate cause, however, is the presence of micro-organisms in the mouth.

5. The results of defective teeth have been emphatically shown by the investigations and reports of dentists. Neuralgia, headache, earache, indigestion, cardiac disturbances, enlarged glands of the neck, sub-acute blood poisoning, and various nervous disorders, including some cases of

---

*Burnham, W. H.—Pedagogical Seminary, Vol. 13, No. 3, September, 1906, p. 304.

epilepsy, and perhaps also of chorea, are among the diseases caused or specially aggravated by decaying teeth. In looking for the cause of these various disorders, examination of the teeth by parents and even physicians is strangely neglected.

6. As regards hygiene, first it should be noted that care of the temporary teeth is of special importance. These temporary teeth should be cared for first because of their importance for the child's nutrition at the time, and second because caries of the temporary teeth often injures the permanent teeth. These should be kept in good condition as far as possible; and with general hygiene and proper care of these teeth the young child will probably seldom suffer from disease of any kind.

7. The sixth-year molars are very apt to be lost soon after they appear. Hence the need of special care for them.

8. The whole hygiene of the teeth resolves itself into a matter of cleanliness. The study of bacteriology has put the whole subject of cleanliness on a scientific basis, and it shows that cleanliness of the mouth is an important factor of hygiene. Pupils should be trained to habits of cleanliness in this respect, to know the luxury of a clean mouth. Then they will take care of their teeth.

9. As it cannot be hoped that sufficient care will be taken to prevent decay of the teeth altogether, and as instruction both of pupils and parents is needed, it is imperative that school dentists should be appointed to examine the teeth of children periodically. Dental inspection is an essential part of health inspection.

10. In general the importance of this whole matter of the hygiene of teeth for school hygiene is obvious. It is impossible to have pure air if 95% of the children suffer from caries. It is almost impossible to have good discipline with a large number suffering from toothache or the reflex effects of diseased teeth, and it is not easy to get the most efficient school work without a better condition of nervous and general health than is possible with so large a number of defective teeth.

The question of dental inspection was taken up in a practical way in the Princeton schools in the fall of 1908. In October, 1906, one of the regular monthly Patrons and Teachers meetings was given over, under the direction of the city superintendent, to the discussion of medical and dental inspection in the public schools. At this meeting Dr. A. L. Ziliak presented a paper upon medical inspection and Dr. J. W. Roper another upon dental inspection. Both papers were ably presented and were generally discussed by other physicians, dentists and patrons present at the meeting. Following this meeting an educational column upon the two subjects was conducted for several weeks by the city superintendent. This was done for the purpose of presenting facts and data and of arousing public sentiment in favor of the movement.

The initiative in beginning the actual dental inspection in the schools was undertaken by Dr. J. W. Roper, in the early part of December, 1908. He had associated with him in the work Doctors Brumfield, Dorsey, Gambrel and Sarah Willey. The work was entirely gratuitous on the part of the dentists, one or two mornings per week being given to the inspection until completed. The children in all the grades of the various buildings were examined, beginning with the first grade in each building. As each child was examined he was given a printed slip containing a representation of the teeth in the order of their arrangement in the upper and lower jaws. All infected teeth were marked on this slip so that the parent, by referring to the slip could tell the condition of the child's teeth. The slip also contained data as to the age, school grade, name of parents and whether or not the child had had dental work done previously. A package of tooth paste was given each child with directions for using the paste and the tooth brush. The teeth of the children in the colored schools and in the high school were not examined.

The total number of children examined was 805. Of these 399 were boys and 406 girls. Of the total number examined, 193 had good teeth and 612 bad teeth. 226 had had some dental work done previous to the inspection but 579 had never had any done. The teeth of forty-eight of those inspected were in very bad condition. There were 17,560 teeth examined and in these were found 1,900 cavities.

Taking the above figures from the standpoint of per cent, we find that about 24% of the children had good teeth and about 76% were infected more or less with caries. About 6% had teeth in a very bad condition. About 28% had had work done before the inspection while 72% had never been to a dentist.

About 10.8% of the total number of teeth contained cavities.

Comparing the boys with the girls we find that 90 boys and 103 girls had good teeth, and that the teeth of 309 boys and 303 girls were in bad condition. Of the total number of forty-eight having teeth in very bad condition, 24 were boys and 24, girls. 291 boys and 288 girls had never had any dental work done, while 108 boys and 118 girls had previously consulted a dentist. Of the 1900 cavities, 1026 were found in the teeth of the boys and 874 in the girls' teeth, thus giving the boys 152 more than the girls. From this data, taking it as a whole, it will be seen that the teeth of the girls were in somewhat better condition than that of the boys though the difference is approximately slight.

Comparing the various grades with one another as to the number of cavities in the teeth of the children, we find that, in proportion to the number of children in each grade, fewer cavities exist in the teeth of the first and the fourth grade children than in the second and third grades. The number in the first and fourth grades and in the second and third grades being approximately the same, respectively, although the difference was but slight. The number of cavities in the teeth of the fifth grade children were appreciably fewer than in those of the four lower grades and were also fewer to a lesser extent than in the teeth of the sixth grade children. The cavities in the eighth grade children's teeth were proportionately fewer than in those of the seventh grade and both the seventh and the eighth contained fewer, respectively, than the fifth or sixth. This would tend to show that the teeth of the upper grade children, as a whole, were in better condition than were those of the lower grades. Children in the second and third grades are at the ages of about eight and nine years, respectively, and are rapidly losing their temporary teeth and having them replaced by the permanent ones. This tends to bring about an unsatisfactory mastication of the food and induces rapid decay of the teeth in many cases. When the child is in the fifth grade, between the ages of eleven and twelve, the permanent teeth are nearly all in, the conditions for the proper chewing of the food are vastly improved and hence the teeth at this age and for several years following are much better than at any previous time.

While, according to the data gathered, the teeth of the boys, taking it in general, were in slightly worse condition than those of the girls, the contrast was much greater in some grades than in others. In the third, fourth, fifth and sixth grades, there was but little difference between the two sexes. In the first and second grades, however, the boys' teeth were noticeably worse than the girls'. Out of the total of 296 cavities in the teeth of first grade children, the boys were credited with forty more than the girls while in the second grade, out of a total of 299 cavities, the girls had thirty-nine fewer than the boys. In the seventh grade the boys had thirty-five more cavities and in the eighth grade thirty-one more than the girls.

Summing up the conditions as found in the Princeton schools in the matter of dental inspection, we find the following:

1. About 76% or over three-fourths of the children had teeth in bad condition and about 24% of the number had good teeth.

2. The teeth of about 6% of the children were in very bad condition.

3. About 28% had consulted a dentist previous to the inspection, while over 72% had never had any dental work done.

4. Taking it as a whole, the teeth of the girls were in better condition than those of the boys.

5. The number of teeth in very bad condition were the same for both boys and girls.

6. The number of cavities in the teeth of both sexes in the third, fourth, fifth and sixth grades were about the same.

7. The number of cavities in the teeth of the boys in the first, second, seventh and eighth grades were appreciably greater in number than in those of the girls.

The good effects of the dental inspection were soon very noticeable.

The inspection was begun in the Lowell school and it was found in many instances that pupils from other buildings, whose parents heard of the inspection, were sent to some dentist to have their teeth examined and treated, before those conducting the inspection had had time to reach the other buildings. This shows the good effects of starting the movement. Toothbrushes, which had before been used regularly by perhaps not more than twenty-five per cent of the pupils, now came into general use. The use of the toothbrush had, however, been taught in a more or less general way throughout the grades for several years.

In conducting the inspection a number of instances were found where parents, either through ignorance or prejudice, or both, had instructed the child not to allow the dentist to examine his teeth. There seemed to be the feeling that the child's teeth would be extracted or molested in some way. When, however, it was found that the inspection was painless and that no work was done on the teeth by the dentist, the child, in every instance, consented to the examination. The child and the parents were given to understand that the examination was made to find out whether or not the teeth were in bad condition and if so the children were at liberty to go to any dentist whom they chose, to have the dental work done.

Since the beginning of the dental inspection last year, it is reported by the local dentists of Princeton that a large number of school children have had their teeth treated. By far the greater per cent of these children had never been to a dentist before and their presence at the dental offices has been the direct result of the dental inspection in the schools. This means, as far as the Princeton schools are concerned, that there will be a little less toothache, a little better masticated food, better digestion, better stomachs, less tendency to tubercular disease, nervous disorders, and fatal epidemics, better school attendance, more attention to studies with better scholarship and deportment, a more hygienic condition of the whole body with a better chance for healthful growth and for better citizenship. Good health and good attendance mean less expense to the community with a consequent lower tax rate. The school curriculum may be crowded and the time for instruction may be short; but medical and dental inspection will take but little time or trouble. The health of a boy or girl is worth more than any curriculum; for with health the curriculum can be mastered, but without it, it will either not be mastered or partially and incompletely so. Dental and medical inspection have come and they are knocking at the doors of every schoolhouse in the land. Sooner or later they must be welcomed everywhere. Fortunate the children who are not long compelled to await their presence.

THE ALIMENTARY CANAL IS THIRTY-TWO FEET LONG—YOU CONTROL ONLY THE FIRST THREE INCHES OF IT. CONTROL IT WELL*

By William Hall Sieberst, D. D. S., New York, N. Y.

THE First Free Dental Dispensary in the United States, (for that matter in the world as far as we know), was established by the Rochester Dental Society, some twenty-five years ago, in the Rochester City Hospital. This, after a trial of two years was abandoned and it was not till a period of twenty years had passed that the matter was again taken up. In view of the former failure, the older members were unwilling to again embark on a similar undertaking.

Some of the younger members, in view of the alarming need of dental services among the worthy poor, persisted in the feasibility of the idea and a committee was appointed; after numerous reports and nothing accomplished, it was announced that the late Capt. Lomb would donate a sum of money sufficient to equip a Free Dental Dispensary.

It was decided to establish the charity at the Rochester Public Health Association, 32 South Washington Street. The Dispensary was opened to the public on Washington's Birthday, February 22nd, 1905, and for the first year, twenty-four members of the Society alternated in attendance. Capt. Lomb then offered to pay for the services of a Dentist who would be in attendance from 2 to 5 p. m. each week day. This arrangement continued to the day of his death; in fact, the family paid for this until the beginning of the present year. It became necessary to call on the general public for support and it was with a feeling of their inefficiency that the Board of Directors took up this work. It was determined to send out a personal letter to those charitably inclined and in it give a statement of the work and the needs of the coming year.

As a result of this appeal, the sum of $1,387.50 was secured.

When you consider that there are more teeth lost from diseased gums than from decay, and that only 4% of all the people of the United States go to a dentist, and that every one must eat and the food must be masticated properly to insure proper digestion, the question naturally arises, what are we going to do about it?

Germany has led the world in this work and established a large number of Dental Dispensaries. Some say a dozen are in operation, another authority says there are over fifty cities so equipped. One of the latest is the city of Berlin; the Berlin authorities had the matter under consideration for some time, and other institutions will shortly follow. The treatment of the poor will be gratis, parents whose means will permit will be asked to pay twelve cents annually. The most elaborate of these institutions is situated in the city of Strasburg, where they have erected a $60,000 building for the Dental Dispensary. This action of the German authorities was taken, after the alarming fact was ascertained, that over 80 per cent of the teeth of her school children were defective and the indirect cause of many ills. In the third annual report of the City of Strasburg, of 2,269 children examined between the ages of three and four, only 362 had good teeth, less than 10 per cent. Of 2,103 between the ages of six and eight, only 160 or seven and one-half per cent; and this third report shows a remarkable improvement in general health of the public school children; less headache, earache and stomach troubles. What must have been the condition there prior to the compulsory education in the care of the teeth!

---

*Read at the New York Throat, Mouth, Nose and Lung Hospital.

The German people are among the first to recognize the fact that the proper care of the teeth has a great influence on the general health. More and more, it has become a demonstrated fact that no person's health can be better than his teeth. They realize that the health of their children was at stake and again, perhaps, the possibility of an army of soldiers without teeth. What use, then, of expensive army maneuvers and equipment? These must have been their reasons for making it compulsory to have the teeth of school children examined twice yearly and any who could not pay to be treated at public expense.

Even Russia, poor tax-burdened Russia, a country we consider as unprogressive, has many Free Dental Dispensaries for its poor school children. St. Petersburg with a population approximating that of Philadelphia, has nine such Free Dental Dispensaries. Thus we see that even the heavily taxed countries of Europe have made such matters a Municipal charge, which is included in the general taxes. We of this country, unless we have made such things a special study, can have no conception of the burdensome taxes paid by these countries; people taxed to the utmost, and yet they think it necessary to add to their burden, Free Dental Dispensaries for their poor school children. Surely, there must be a reason.

You may talk dentists and dentistry, teeth and food of the prehistoric man, irregular dentition due to the mixture of different races, worries, mouth breathing, decay, abscess, wisdom teeth (and no wisdom), strenuous living, anything that interferes with good sound teeth and gums, the fact still remains that the majority of our people of today do not know how to care for their teeth; from the first teeth to even the artificial set: and they have them at all ages.

What are *we* doing for the children of the worthy poor who are sadly in need of dental services? It requires no argument that a family of six, with a total income of $10 a week and paying $3.50 house rent, cannot afford the luxury of a dentist. To the children of the worthy poor, brought into the world without their consent; poorly nourished, without sufficient clothing to cover them decently; with a widowed mother or a consumptive father as a bread winner; it is a duty and a privilege to help.

Is it worth while? Let us see. On the first presentation of the patient, they are relieved of their immediate sufferings and the teeth given a prophylactic treatment whether they need it or not. Cleanliness is next to Godliness and the teeth can not be *too clean;* and they are *never* clean. The patients are instructed in the use of a tooth brush and powder and if they can not afford the powder they may use salt water and water. If a child has a dirty face and hands they should be introduced to a cake of soap and a towel then and there. After these preliminaries, they are ready for the detail work of preserving their teeth. These children soon learn, and present themselves with improved conditions. The lessons are carried home and must have an influence on the family life. Quite a number of the applicants are the children of our foreign population. We are helping to make them better citizens, better men and women; the care of the teeth is a step toward the care of the body in general, and with it increased confidence and self-respect.

The dentist is not adding to his skill or fame, in performing operations embracing no greater field than amalgam and cement fillings, cleaning teeth or extracting. I would like to see more done, of course, that requires money, equipment and more dentists, and will be for further considerations in the near future, I hope.

The dentist, as an individual, is doing all he can, he gives generously of his time and talents as far as a busy office practice will permit, I am sure if more Dental Dispensaries were organized in ALL the larger cities you would find many dentists who would lend a hand to the deserving poor people. This paper might suggest ideas for the future; in the meantime I am glad and willing to help in this excellent cause and hope that more dentists will see the importance of this work and continue it for the honor and glory of themselves.

DENTISTRY FOR THE MASSES*

By Sidney J. Rauh, D. D. S., Cincinnati, O.

IN A PAPER published in January, 1905, "Six Years' Work in Oral Prophylaxis." by D. D. Smith, D. D. S., M. D., of Philadelphia, Pa., he aptly presents the necessity for what we may term "Sociological Dentistry," although discussing Prophylaxis in private practice:

"The greatest sanitary reform of the world lies in the Herculean task of revolutionizing the unsanitary and infectious conditions of the human mouth. Contagion and disease are subtle and dangerous, for infection in the human mouth is found in all places where humanity dwells.

To "the masses of the people" dentistry of the present extends no benefits, it presents no hopes, it affords no relief, save in one direction—

---

*Read before the Ohio State Dental Society, December, 1909.

that of ridding the mouth of aching teeth through extraction. "The mass of the people" are not instructed respecting the teeth; they are wholly unacquainted with the necessities, requirements or value of these organs. How, then, should they be expected to follow out any theory or give attention to the details of any "system," for their betterment or preservation?

When instructed, patients have been quick to see and appreciate the imminent danger of systemic infection due to septic states of untreated teeth. A set of septic teeth, ordinarily presenting a surface of twenty to thirty square inches in the oral cavity, a cavity which has been aptly designated "the vestibule of life," is a perpetual menace to human health.

No adequate consideration has ever been given to the sources of infection inherent in the human mouth, consequent upon the presence of natural teeth. The adverse local consequences—decay, alveolar necrosis, pyorrhea, gum recession and final loss of teeth—are as nothing in comparison with the evils to be revealed in the systemic disturbances and diseases which result from the continuous state of infection found in association with the teeth in the human mouth. These conditions, studied by dentistry and intelligently set forth to "the mass of the people" would find a "receptiveness" which would render incalculable benefits to general health, longevity and happiness of all civilized humanity.

It can only be done by a process of education, and that through instruction given by dentistry. Every dentist should first inform himself and then fully instruct individual patients in the details of the care of the human mouth. The people should be taught that cleaning the teeth is not merely the possession of a tooth brush. The best-shaped brush in the world will not clean the teeth in a human mouth unless it be intelligently used.

The secrets of tooth decay, in and of themselves, are of minor consequence in comparison with the systemic infections due directly to states and conditions of the teeth in the mouth. We venture to predict that recognition will ere long be made of the fact that tuberculosis—that decimator of homes—and possibly other grave chronic disorders can find no soil for development in a system kept from the contaminations of mouth infections through a rigorous prophylaxis treatment from childhood.

We have abundantly proven that many gastro-intestinal troubles are directly traceable to the mouth infection of alveolar-pyorrhea; also that many pharyngeal and tonsilar inflammations and many skin troubles have their origin in infection in the mouth, due to septic states of neglected teeth. We know, also, that mental depression and hypochondria and many of the perplexing nervous conditions in women, result from the same cause."

When the writer first considered the idea of presenting a paper upon this subject there seemed to be a lack of enthusiasm upon the part of the profession as well as the laity. Within the past few months there appears to be an aroused sentiment which augurs well for the movement. Some of the most prominent men in various centers are promulgating the "new creed of dentistry" and the subject which has been almost entirely theoretical has developed into an essentially practical one today. The dental literature is full of matter pertaining to it. No later than in the October *Cosmos*, a most excellent editorial appeared in which interest in the movement was urged. In some of the larger cities medical examination of school children is an accomplished fact, a great many of the school systems in these cities having special schools for so-called defectives. Modern educational methods recognize that in order for a child to do efficient work, his physical make-up must be normal. In many of the cases, the defectiveness is remedied by the removal of the cause of disease. The particular causes are adenoids, enlarged tonsils, other defects of the throat, defective vision, tuberculosis and kindred diseases of civilization and in a great many cases *defective teeth*, causing stomachic disorders and the numerous complications from lack of proper digestion. It is scarcely necessary, before a Dental Society, to further call attention to the necessity for this class of work and we shall assume that there is no doubt in the minds of the profession of its urgent need.

In the September *Brief*, the statement is made that only about 6,000,000 people have their teeth periodically examined and the necessary work done, less than 8% of the entire population. If this be true, and there is no reason to doubt the statement, it will open up a field for dentistry in this country which has not been realized. There are approximately 30,000 dentists practicing in the United States and it can be readily seen that this is not an adequate number, therefore, if the work can be carried on, it will not only be a blessing to the laity, but to the profession as well.

Several times, in various articles, attention is called to the fact that advertisers are probably receiving more than their proportion of the dental practice, more especially of the poorer classes. Why should this be? In our opinion it is due to the fact that the people do not realize the importance and necessity for dental treatment and only when they are forced to do so, is their attention attracted to the defects in the mouth; naturally, they drift to those places which are brought to their attention. It must be our duty to educate them and this means not only the poorest classes but the great majority of people who can readily afford to pay for service.

The Principal of the Sixth District School of Cincinnati, where the dental examination was made last spring, makes the assertion that probably 25% at least of those examined could afford to pay for service and less than 5% at that time had availed themselves of the opportunity. This is in one of the poorest districts in Cincinnati and the proportion of those who can afford to pay would be greater in the more prosperous communities.

The work may be instituted through the existing dental organizations along the following lines:—

First:—

INSTITUTIONS: All private, municipal, state and federal organizations, such as houses of refuge, the various prisons, orphan asylums, etc., should employ special dentists either with or without remuneration as the exigencies of the situation demand. This part of our propaganda is simply one of educating those in charge of these institutions to a realization of the necessity for the work. Last year we had the opportunity of addressing the children of the House of Refuge at Cincinnati and the Superintendent informed us that the only dental service performed was the occasional extraction of a tooth by a dentist of the neighborhood who had volunteered his services. Is it not as necessary for the state to take care of the mouths and other bodily defects of its dependents as well as their education? We are pleased to state that every child in this institution is required to use the tooth brush at regular set times each day and the arrangements for caring for their brushes are adequate.

Second:—

POPULAR TALKS TO THE PUBLIC: That a great deal can be accomplished by this form of education there is no doubt. That the opportunity exists for delivering these talks only requires the willingness on the part of the profession to do the work, to realize. There has been an insistent demand in our city for lectures from Social Settlements, the Mothers' Clubs, (which form a part of the Kindergarten system in the Public Schools), so called Parents' Clubs, Courses of Lectures on Hygiene, in fact, within the past three months we have probably been called upon to deliver at least 30 lectures. The Odontological Society of Cincinnati has recently appointed a committee for the purpose of doing this work and some 15 to 20 men have volunteered. The slides, which will be shown, are the basis for the lectures and certain rules must be observed in order to attract and impress your audience. About 30 minutes should be the limit of a talk for if you go beyond this time, one is apt to become technical and dip too deeply into the subject, thereby losing the effect of impressing his auditors with the two main points—necessity for adequate brushing and the restoration of the mouth and teeth to a hygienic condition.

Third:—

PUBLIC CLINICS: The colleges are undoubtedly doing good work; it is manifestly impossible for them to treat all indigent poor without pay. District Physicians are a part of the municipality as much as any other branch of the City Government. District Dentists must be the next step. At first it might be necessary to demonstrate the feasibility of this idea by the employment of only a few men. The results following the restoration to the normal of the mouths of the children of a room in school would be sufficient to impress upon all the necessity for the work.

Fourth:

SCHOOL EXAMINATIONS: As a purely experimental proposition the mouths of 920 children of one school in Cincinnati were examined. The results will be shown to you upon several of the slides. Dr. Ebersole of Cleveland has provided the following figures for me, the result of a similar examination held in Cleveland in June, 1909.

NUMBER EXAMINED	REQUIRING ATTENTION	NUMBER OF CAVITIES
864	92.8%	3920
691	97.0%	4494
298	95.3%	1342
824	98.4%	5505

In an examination in one of the Detroit Schools the following was furnished the writer by Dr. Zederbaum:

NUMBER EXAMINED	REQUIRING ATTENTION	NUMBER OF CAVITIES
305	98.6%	1334

From the experience gained in this examination we should say that with adequate assistance, one man can examine 20 or more children per hour, or 60 or more in an afternoon. Therefore, if five men volunteered for each day, almost any school could be finished within a week. Five men per day for five days are preferable to a larger number for the reason that a certain amount of disorder maintains when too many children are brought in the room at the same time.

After the examination. cards must be sent to the parents of the children and "a follow up system," which consists of having the district nurse investigate the case and explaining the necessity for the work wherever it is considered expedient, and this, with public lectures will dispose of from 15 to 25% of the cases by receiving dental attention of their own accord, then there are a certain number who do not require immediate attention so that the free clinic work would not be as great as would appear upon superficial examination. Cards were sent to the parents of all the children following this examination, at a very inopportune time, and still the principal reports this result, which should certainly encourage us to proceed:

52 children had 80 teeth extracted.

16—cleaning by dentists.

26 had 61 fillings and 4 crowns inserted.

It is our intention to send a second card to these same parents and we believe that even a greater number will receive attention. The Free Clinics and District Dentists must take care of the rest. In the small towns the proposition should be a much simpler one and if the dentists of these communities would co-operate, their problem might be readily solved. The assistance of newspapers, magazines and other periodicals can easily be obtained by individuals interesting themselves in the movement.

Since writing this it has been noted that both the DENTAL SUMMARY and *Dental Brief* have started campaigns. The former more especially seems to have worked out a feasible scheme and their work should receive the support and commendation of the profession.

If you will review the work done by the Anti-Tuberculosis League all over this country, if not the world, the result which can be obtained by arousing public sentiment is demonstrated.

The following extracts from the report presented to the Odontological Society of Hamilton County, may serve as a basis for similar work in other places, as well as a means of rectifying mistakes which have been made through our inexperience, by bringing about a discussion:

"The work accomplished by the committee, assisted by the members of the society, consists of the examination of the children of the Sixth District School, which is located in one of the poorer sections of the town; the pupils represent almost all nationalities, a great many of whom have only been here a short time. The examination was conducted in a methodical manner with the hearty co-operation of a great many of the members of our society and also with the assistance of the nurses of the Medical Examination Department and a number of volunteers."

"Some of the questions asked were not properly answered which accounts for a seeming disparity; for example, the one of cleaning teeth—414 answered yes and 509 no, but from our experience we should judge that over 750 children did not use the tooth brush at all."

"In the detailed report presented herewith, you will note that 10 children at the age of 15 were examined in which 25 first molar teeth were defective, and when you consider that some of the teeth had already been extracted, the percentage would be even greater."

"The plan adopted for the examination was to have an assistant for each examiner who did his clerical work, the card presented by the children being already filled out as to name, age, address, etc. In addition to this there were nurses who took charge of the children and also of the instruments. At the end of the examination held the first day, a talk was delivered to the teachers, who manifested considerable interest in the work and at the completion of the examination the children of the higher grades were addressed upon the same subject. The pamphlets printed by the Board of Education, under our supervision, were distributed that same day after a short talk by the teachers and in this way we think that a good campaign is begun. In addition to this, every child was given a slip which told of the special needs for his case and instructed to present same to his parents."

"The diagrams presented herewith (they will be thrown upon the screen), show explicitly the number of defects. 2034 first molar teeth were defective in 920 children and when you consider that some of the children examined did not have their first molars you will see what a terrific percentage it is:

250 Second Molar Teeth Defective.
150 Central Defective.
81 Laterals Defective.
8 Cuspids Defective.
106 First Bi-Cuspids Defective.
120 Second Bi-Cuspids Defective.

"The report shows that about 90% of the mouths were defective; 76 mouths were reported as irregular—but only the extreme cases were noted. 112 permanent teeth were reported as missing, this being a most conservative number as undoubtedly in the haste of examination a number of cases were overlooked."

"As the result of this work, your Chairman was invited, by Dr. Dyer, Superintendent of the Public Schools, to address the 'Teachers' Institute.' This was done in the early part of September, there being fully twelve hundred (1200) teachers in the audience."

"Dr. Dyer, as well as Miss Bothwell, Superintendent of Kindergartens, especially requested that the Mothers' Clubs, 38 in number, be the first to receive attention and this suggestion has been adopted. We would suggest that a permanent lecture committee be maintained by our Society, to be at the disposal of all organizations that wish to receive instructions on 'Dental Hygiene.' "

"The slides, which will be shown, can serve as a basis for the talk and the Committee will assist any who feel diffident regarding public appearance upon the platform."

"Now what shall be done with conditions as indicated above?"

"The moral support of the Board of Education and of the Health Office we have already. But this is not sufficient."

"The ultimate goal of a movement such as this must be the employment, by the City, of dentists at a salary, to take care of the indigent poor. The province of our Society from now on must be a concerted move to popularize this idea. This can be done by attending all public movements which have as their object the improvement of general hygienic conditions. Dr. Schaar, head of the medical examination department, has informed us that the Cincinnati Academy of Medicine will have a special session in the near future which will be devoted to the question of School Room Hygiene and Medical Examination. It is our intention to appear at this meeting and attempt to impress upon the medical profession the importance of our movement. However, it will be necessary for the dentists themselves to become thoroughly imbued with the spirit of the movement before we can hope to influence outsiders. If the city will not allow an appropriation in the near future, we would recommend that a private subscription be attempted with which to employ several dentists to do this work and in this way we can demonstrate the feasibility and necessity for the work. In order to do this it will be necessary for the society to give its hearty co-operation and for us to examine the mouths of the children of at least six more schools beginning this fall."

"In addition to this, a score of men should be prepared to deliver lectures in all the schools, at least where these examinations are made. The slides which are shown this evening, making such a talk a very simple proposition."

We would welcome any suggestions for the furtherance of this work and think this is the opportunity for our Society to demonstrate that it is in the lead of a movement which is taking root in many of the communities of our country.

At the conclusion of the above paper, the essayist showed a number of slides which were used for talks to the public and he had intended to illustrate the same in conjunction with the publication of this paper. Since this time the Ransom & Randolph Co. are advertising a series of slides most of those which were shown being among this collection and therefore we do not deem it necessary to present these illustrations herewith. Suffice to say that various cross sections of teeth, nerve distributions, methods of cleaning teeth, results brought about through lack of proper hygienic procedure, showing the eruption of the first molar and the results following its extraction, were the subjects treated.

DISCUSSION.

John W. Dowd, Toledo: I will simply say to the members of the Dental Association that some time ago the Dental Summary and some philanthropic gentlemen connected with it asked me to prepare and deliver a series of lectures on the care of the teeth to whoever wanted to hear it in Ohio. And I want to say that after investigation I came to the conclusion that everybody ought to hear such a lecture because from the best information I could gather only about eight percent of the people take any care as to the cleanliness of their teeth. I have been doing work connected with sanitary conditions of schoolhouses. We all know how the boards of education have been very anxious to have perfect lighting, heating and sanitary appliances; and I have thought, since investigating this subject, that they have paid a great deal of attention to keeping the outside of the platter clean, while inside there was a great deal needing attention. Now I have read in your journals that the exposed surface of teeth in the mouth is from 22 to 23 square inches, liable very often to be covered with decay, covered with dirt and microbes of every variety. If that much uncleanliness was on the floor we would get at it at once and disinfect it; but being in the mouths of the children it contaminates and vitiates without our ability to get hold of it. We get very crazy about an odor in the school room. If there was any such foul odor such as comes from these teeth the board of education would be notified and the greatest expense gone to to trace where the odor came from. It seems to me that the condition of the teeth of the children in our schoolrooms where there is a great deal more danger from these unclean teeth, more danger in the spreading of disease than from ordinary things about schools should be looked after by boards of education. I want to put myself in position to say to the people just what they ought to have said to them. I want to say to them, from the standpoint of the well informed father, what ought to be done for their children; and I believe, from what I have learned already, if I can just teach them that the sixth year molar is a permanent tooth and should be wisely guarded and taken care of, if I can convince the people of this country that the temporary teeth are not to be pulled out as fast as they are loose but that they should be left until their roots are absorbed by the oncoming teeth, if I can teach them that the care of the teeth is a large thing in the proper development and preservation of the teeth that are to come after I will be doing a great deal. St. James said—"So is the tongue among our members, that it defileth the whole body and setteth on fire the course of nature; and it is set on fire of hell." Now if St. James had been giving a description of the mouth from the modern sanitary idea of microbes he could not have given a better description that he has given there of an unclean mouth.

I shall not pretend to have any professional knowledge; but I want it understood I am a friend of the dentists. I shall be a sort of John the Baptist in the wilderness preparing the way for the good dentist that is to come, and make these boys and girls into men and women with clean good mouths and strong good teeth in order that their bodies may be strong and enable them to do the work of life.

Dr. M. H. Fletcher: I presume my friends call on me because they know my especial interest in this work, and because I have been interested in it for many years. I would only add, if possible, strength to the words that have been given, as to the importance of the cleanliness of the mouth, not only as to its local effect but also as to general health.

Dr. Rauh referred to the difference of opinion as to methods of cleaning teeth, especially the brushes.

My own habit in teaching this to my patients, and in schools and other places is to insist upon it that the patient tries some method continuously. Those of you who have given the matter much attention know how few people really know how to clean the teeth. I can say that in my experience of years it never yet has been my privilege to find that even the most intelligent and hardworking patients learn to clean their teeth in less than three months; many of them take six months and some, a year. Anything that takes so much time to learn requires much teaching, and it also requires that we ourselves know how, and know when a mouth is clean.

As to the methods of cleaning the teeth. I have differed with Dr. Rauh, he seems to think, because I have advocated a different brush and a different method of using it. I insist upon it that the patient use this hard brush the best he can, but some brush must be used well and hard in order to clean the teeth, upon this we agree. I also hold in addition that by scrubbing the gums connective tissue is thus developed in them to a very beneficial degree, in addition to the cleaning. Hard brushing has the same effect upon the human gums that the masticating of hay, twigs and other rough substance has upon the gums of animals living upon rough vegetable foods. Try the experiment in your own mouth and see how readily nature will respond.

I have for ten years been using and recommending a powder of my own, composed largely of corn meal. It took me five years to find out that this could be used, and used efficiently without abrading the teeth. When used in sufficient quantities to really cleanse it requires about a teaspoonful at a time. It has been my experience that the teeth and mouth cannot be sufficiently cleaned without powder and plenty of it. A powder that will not abrade is better than one that will.

Many powders contain soap, which I believe to be wrong, for the bristles of a brush lubricated with soap will slip over the tartar and food instead of removing them. I have been criticized because I put this powder on the market under the name of Vegetol. I organized a little company for carrying on this part of the business but it has been disorganized with a loss of $15,000 to me and my friends. This is what it cost me to try and get the people and dentists to use something which I feel sure would greatly benefit the mouth and teeth without injury. Without discouragement, however, I propose to continue to the end on CLEANLINESS FOR

PREVENTION AND HARD MASSAGE OF THE GUMS TO DEVELOP RESISTANCE. It took me five years' time and much expense to get the brush made as I wanted it. And you all know I would not take the time and spend the money if I did not believe it was necessary for it is a continual expense without profit.

Dr. J. P. Corley, Greensboro, Ala.: I wish first to thank you for the courtesy of the floor and this opportunity to speak to you upon the subject to which I have given the best energies of my life. I fully realize and appreciate the fact that the floor should be occupied by a member of your own local society, because this is your work. Your are pioneers along this line, and the program which you have laid out to begin at this time is your individual work and I would not for a moment have you think I have come from a distance to offer suggestions and to undertake to shape your policies.

Now, gentlemen, during the time I have spent in this work I have found that the crux of the situation lies with the dental profession and not the general public. We have found, and it is one of the first things we have found, and we have been finding it and refinding it ever since, that we cannot get the rank and file of the dental profession to take up and prosecute this work. And why is it they won't do it? There are a great many reasons. One is they don't care; but another and a very important reason is they are not qualified and equipped to do the work. They have not been taught it; they were not taught it in their schools; they are not prepared to do the work and they cannot get up before an intelligent audience; and some of them I don't blame for refusing to do it; but that is a correctible position. I understand you have before your meeting at this time a plan which will go toward equipping all the dental profession; that is you have provided a hygiene equipment which will be made available by all the dentists of this country.

Now the work I am doing is with the dental colleges, the young men who are coming out from college halls will meet a public that will demand information along this line and if they are not prepared to meet the situation we will find our work will be still under a great handicap. So I am visiting the colleges throughout the country. I expect to see about twenty student bodies and the faculties of those schools. I have already seen seven or eight; and lay before the student body an outline of what we mean by hygiene prophylaxis. We are toothists; we have been tooth dentists, and we want to get the dental students to understand that we have not been doctors of anything but we are going to be in the future. So I visit these schools and I present the matter to them. We have to begin with the child's mother, and we have to carry him through babyhood; and we lay special stress on function. We give the student to understand that prophylaxis doesn't mean just cleaning the teeth by some mechanical means; but that this must be functional, functional until the second molar comes in, until the mouth is complete that function is required for the development of the muscles of mastication symmetrical dental arch and one which is efficient, and if they begin grinding solid food at that time the tooth brush and the silk floss will not be of so much importance. What we want to do is to establish a chair in these colleges. I am undertaking to provide some means whereby without increasing the burdens of the faculties we can give this subject a special chair, by taking work from other chairs that can be done without additional expense. I am doing this work at my own expense. I do not hope to visit all the schools in the country; but I am making arrangements to have the matter taken up and we want to make the dental debutante a missionary; we want to send him out inspired and equipped to do this work.

Dr. W. G. Ebersole: Dr. Jackman has asked me to say a word in regard to the chart which was brought in. I wish to call your attention to one thing in regard to this chart and that is that it shows that the poorest teeth are found in the mouths of American citizens. The best record was shown in the Murray Hill school district where almost the entire population was Italian. Dr. Jackman will talk to you in regard to that.

I want to speak of the report of Dr. Jackman. For a number of years you have had a committee on Oral Hygiene. What have you accomplished? I have been present when reports have been made and recommendations made and things have been smoothed over without any action. Oral hygiene today is one of the most important questions before the dental profession, so far as the profession is concerned, and so far as our duty to humanity is concerned. The whole country is waking up to the need of attention along that line. I cannot go into details of the work as we have outlined it in Cleveland; but the National Committee has agreed to join hands with Cleveland in taking the lead in a campaign that will awaken the world in this line of work. The time is ripe, and I am glad to know that one of the men who has done more than any one else in the world is to be our next president and for that reason the time is ripe as far as Ohio is concerned to take up and follow the direction that Dr. Jackman has made and make Ohio lead the world in Hygienic work. We hope, by the action of the Ohio Society, to go to Denver next summer and present to the Denver Association for action a plan which has been adopted by Ohio, to be known as the Ohio plan, or the Ohio campaign for oral hygiene education. Dr. Jackman has been modest to ask a society of this kind which has in its treasury something like $2800 to give to this cause the small sum of $500 to equip men to lecture, or to have men like Mr. Dowd to go before the people, not only the people but the dentists, to teach them the importance of this great work. Why is it after so many years of ardent work by this profession that less than ten percent of the people are receiving dental services; when we find the children in our school rooms, where they breathe the air over and over, 97% are diseased? What can we expect to accomplish, ladies and gentlemen? Who is to blame, who is at fault? The conservatism of the dental profession. We have stood in our own light. Now when the question comes up for making appropriation for this work, stand pat, vote for something that is going to do not only the profession but humanity good.

Dr. M. L. Rhein: In the first place, Mr. President, kindly permit me to say that it gives me the greatest pleasure to be your guest in the state of Ohio. Judging from the number of natives of this state that I have had the extreme pleasure of making my friends in the city of New York, I can readily see from this afternoon's meeting the reason of their great success in New York and of the reputation that your state has acquired throughout our nation as the leading state, at any rate in the manufacture of the ablest citizens of the union.

The address that I have listened to with so much interest is not a new subject to me. It has been dear to my heart for the thirty years that I have been practicing dentistry. I believe that the second literary effort of my professional experience was a paper on oral hygiene that I presented in the city of Worcester, Mass., in 1844; and at various intervals in the early 80's I endeavored to enlist the support of the various dental societies in the city of New York in something of this kind. It was a futile effort on my part. I thoroughly agree with Dr. Fletcher that if the regular tooth brush could be eliminated and the gum massage brush introduced to the attention of the people that the public would realize better what brushing meant; because in conjunction with Dr. Rauh's paper I wish to make just this statement: I think that a caution should always be given to the patient never to have the ends of the bristles of a brush come in contact with the gums of the patient. That is a danger that is ever present. When a traumatic lesion of this kind is produced there is a resulting possibility of infection into this wound; that is a source of danger. I think a little more pressure should be made on the necessity of the side of the brush being placed against the gums before the brush is rotated in order to prevent this motion. I fully agree with everything that has been said in regard to the value of lectures to the public and to the school children and to educators generally along this line. I have recently endeavored to interest the school board in the city of New York to have this subject properly taken up by the city of New York, that is popular lectures according to the line so well portrayed by Dr. Rauh in his paper. In regard to the subject brought out by the Cleveland Dental Society I also am very much interested; but I wish to say a word about the children in the schools that require treatment. I think the principle as elucidated by the Cleveland society is a wrong one in regard to the treatment; not that the treatment should not be had, but this should be given by the municipality itself. In my visit abroad last summer I was intensely interested in the work that is being done, especially in Germany, in this respect. The recognition which the German government has given to dentistry at the last International Congress held in the city of Berlin surpasses anything that our specialty has ever received, and it was given solely because in Germany they have made the government realize what we so readily understand, that unless the children have good teeth they won't be good soldiers; that is the thing that moved the German government to the great value it is now placing on dental services; consequently the government in Germany has taken this matter up and has given its financial assistance to the treatment of indigent children who cannot pay for such services.

Then there is another point. The ability of the dental profession as dentists to combat the evil here illustrated by their own means I question, and my suggestion is that at the outset the greatest value which they could give to these children that need such services is the work of placing these mouths first of all in a clean condition. If instead of attempting to do dental services in the way of filling teeth, (unless they are in actual pain), they would limit the work at the outset to oral hygiene, they would have more to do than they could accomplish. The main point that should be brought out in lectures to the laity is that with an absolutely clean mouth caries of the teeth is an impossibility, if such a condition can be maintained. So in such a work as is being started in this state its initial work ought to be confined to prophylaxis until you can see your way clear to increase its value along other lines. Again we all realize that as we leave the age of childhood and reach the age of maturity we have reached the period of immunity to rapid caries of the teeth, and it is at that period, the most important part of a man's or woman's life, that if this habit is taught its value in the preservation of the teeth has become most important.

Dr. H. B. Tileston, Louisville, Ky.: I haven't any particular message to give you in reference to this great educational work on oral hygiene. It has been a great pleasure to me to be here today, and to hear these discussions and to see such a startling advance step made. I think this country is to be congratulated because this movement has been started with such energy and such promise of success as has been shown today. I wish that I could say that in Kentucky we have gone a little ways along the line. We have tried it two or three times, some of those sporadic efforts spoken of. But if you will go ahead and lead the way, we will promise to follow. Dr. Corley speaks of his visit to the dental colleges, trying to stimulate the faculties to introduce a chair of oral hygiene in the colleges; I think his effort is all right as a pioneer movement to provide recruits to carry on the work in the years to come, but is not what we want right now. What we want now is just what you have done today. Start the work and keep it up until new recruits are prepared to take it up and spread it world wide.

Dr. W. T. Jackman: In the discussion of Dr. Rauh's paper nothing was said about the tooth pick. I consider the quill tooth pick, properly sharpened, one of the most efficient aids, when carefully used, that we have in caring for the teeth. Indeed I would rather have a child of mine neglect the brush rather than the pick. Quite an ideal way of caring for the teeth and thus preventing caries would be to use the brush; with a good tooth powder, every morning on arising and before retiring at night and the pick after each meal.

Mr. President, while on my feet, permit me to say that I offered several suggestions in my report as chairman of the committee on oral hygiene which I would like this body to take some action upon.

The President: What is the pleasure of this body relative to the suggestions or recommendations in Dr. Jackman's report?

Moved and seconded they be adopted.—Carried unanimously.

Dr. Sidney Rauh (In closing): The discussion which has followed the reading of this paper is most gratifying. It proves that this is not a theoretical proposition any longer. I heard Dr. Eliot, of Harvard, some few weeks ago in a lecture in our city say that all the great reforms of the world had been accomplished by a few men, and the enthusiasm of those men have led the people to do great things. The enthusiasm is in this room. It is for you to go out and spread it. Dr. Corley had the gist of the whole matter when he said the responsibility of the matter lies with the profession, not with the people. The people do as you lead them. It is up to you; you have made a fine start this afternoon. The magazines are doing a good work in sending out their lectures. We must work together. We must interest the people—through public lectures, personal influence and displays after the method adopted by the Anti-tuberculosis society. Secure a vacant store-room in a central location, arrange a display, showing methods and statistics, have competent people in charge and deliver lectures every hour or so, in this manner hundreds may be aroused. Follow up this idea and let every man put his shoulder to the wheel, and they will not say in thirty years from now that it was a sporadic movement, as some one has remarked in this discussion.

REPORT OF COMMITTEE ON HYGIENE*

By W. T. JACKMAN, D. D. S., Cleveland, Ohio

Chairman of Committee

The past year has been freighted with much that augurs well for the profession of dentistry. It has not only marked, as never before, the awakening of the profession, as such, but the individual members thereof to the crying need for public oral and dental instruction and the necessity for state appropriation of funds for caring for the dental wants of the indigent poor. The movement is world-wide, which shows that the heart of the dental profession is beginning to pulsate in unison with all the forces that make for the helpful uplifting of humanity. The grand old state of Ohio is ever panoplied for both moral and physical warfare; always in the van, for you shall hear presently, when Dr. Rauh reads his paper, what has been done in the southwestern corner of the state, Cincinnati. Your committee on Oral Hygiene begs to submit the following report:

We could not get busy early in the year for the reason that we wanted the report of the Committee on Oral Hygiene of the Cleveland Dental Society, Drs. Ebersole, Owens and Price, as an incentive to others throughout the state to go and do likewise.

This committee referred to obtained permission from the Board of

---

*Read before the Ohio State Dental Society, 1909.

Education the latter part of May, 1909, to examine four typical schools, which was done early in June. This examination resulted in the records found in this chart (Here explain chart).

Immediately following this came vacation and of course nothing could be done until the schools opened about the middle of September. That indefatigable worker who never says die so long as he knows he is in the right, Dr. Ebersole, together with his colaborers on the Committee, Drs. Price and Owens, won a victory for the cause for which this report stands, a victory the result of which will be so far reaching that suffering humanity, particularly the poor, will be forever indebted to them. I refer to the granting of three things, to the Cleveland Dental Society by the Board of Education of Cleveland, viz.:

1st. The privilege of making an oral and dental examination of all the school children (grammar grades) of Cleveland, about 56,000 in all.

2nd. The privilege of establishing four clinics, for one year, for the care of the teeth of the indigent poor, and,

3rd. And most important of all the privilege of disseminating knowledge, by lectures, to the public on preventive or prophylactic dentistry.

The above is a tremendous task for the dentists of Cleveland, but, listen—at the last meeting of the Cleveland Dental Society, it was almost unanimously voted that each member should give a whole week's time during 1910 to the above, or its equivalent of $33.00. Over seventy (70) members have already signed to this end. Now, my fellow members of this Society, do you think we are quite awake over in Cleveland? If you can visit us during the year 1910, we shall be most happy to prove to you that we are. Dr. Ebersole has charge of the Educational work, Dr. Owens of the examination and Dr. Price of the Clinics. The rest of us will be their servants, willing to do their bidding during the year 1910.

Cleveland proposes to set the pace for the world, for nowhere has such a gigantic scheme been proposed, and it will be carried out.

After the Cleveland Dental Society, through its Committee, succeeded so splendidly, the Chairman of your Committee proceeded to get busy at once by sending letters to cities all over the State, telling of what had been accomplished in Cleveland and asking them to do likewise, with the result that examinations have been made in Youngstown, Canton, Delaware, Gallipolis and others are ready to begin the work.

Reports in percentages from some of these cities have reached me; others have not, but will be ready in time for use by our Committee on Dental Legislation.

Now, the data we shall get from the year's work in Cleveland will be so perfect that it will be the average standard for the civilized world.

As previously stated, the dentists of Cleveland have agreed to give a week's time or $33.00, but something more will be needed, as you know, such as chairs, filling materials, etc. I have taken the matter of filling materials, alloy, mercury, cement and gutta percha, up with Mr. C. S. Bigelow, president of the Ransom & Randolph Co., and it is his belief that he can get the manufacturers to donate them. As to the further equipment of the Clinics, Dr. Ebersole has that in hand and he is Chairman of the Committee on Education and Oral Hygiene of both the Cleveland Dental Society and the National Dental Association. He will explain to you what he has accomplished and will go more fully into detail as to the Cleveland work. The Cleveland Committee invited the Chairman of your Committee to co-operate with them and thus have the State represented in the work there; this invitation we gladly accepted and in this way the State Society has kept in close touch with all that has been done.

Inasmuch as the State Society some years ago advocated in the main the things, theoretically, we are now about to realize practically, it becomes necessary for this Society to assist in getting a full equipment for the work. You will observe I have said nothing about an equipment for the Educational side of this work. I have been a member of this Society so long and know its spirit so well that I am sure you will grant my request, viz., that a fund of not less than Five Hundred ($500.00) Dollars, if such an amount be necessary, be given to procure the proper equipment for this side of the work.

This equipment shall be the property of the State Society.

Several suggestions and I will have done:

1st. We should, hereafter, use the more comprehensive broader name, The Committee on Education and Oral Hygiene instead of the mere word "Hygiene."

2nd. Make your Committee on Education and Oral Hygiene custodians of and responsible for this equipment.

3rd. This Committee, with what help it desires to call to its aid, should prepare a lecture of not longer than 40 minutes, the same lecture to be given all over the State wherever called for.

4th. The incoming president should appoint the Committee on Education and Oral Hygiene as early as possible, so that a conference of the Committee may be held before the Association adjourns.

Last and one of the most important suggestions, cut this Committee down to three in number.

Respectfully submitted,

W. T. Jackman, *Chairman of Committee on Hygiene.*

OPENING OF THE NATIONAL CAMPAIGN FOR ORAL HYGIENE, UNDER THE AUSPICES OF THE NATIONAL DENTAL ASSOCIATION, THE OHIO STATE DENTAL SOCIETY AND THE CLEVELAND DENTAL SOCIETY

March 18, 1910, Grays Armory, Cleveland, Ohio

ORAL HYGIENE COMMITTEE OF THE NATIONAL DENTAL ASSOCIATION.

W. G. Ebersole, Chairman	Cleveland, O.
E. P. Dameron, Vice Chairman	St. Louis, Mo.
Richard Grady, Secretary	Annapolis, Md.
J. P. Corley	Greensboro, Ala.
Paul G. White	Boston, Mass.
W. A. White	Phelps, N. Y.
H. C. Thompson	Washington, D. C.

EDUCATION AND ORAL HYGIENE COMMITTEE OF THE OHIO STATE DENTAL SOCIETY.

W. T. Jackman, Chairman	Cleveland, O.
S. J. Rauh, Secretary	Cincinnati, O.
H. M. Semans	Columbus, O.

EDUCATION AND ORAL HYGIENE COMMITTEE OF THE CLEVELAND DENTAL SOCIETY.

W. G. Ebersole, Chairman.
J. R. Owens, Secretary.
Weston A. Price.
Frank Acker, Director of Clinics.
H. R. C. Wilson, Secretary of Examinations.

PROCEEDINGS OF AFTERNOON SESSION.

DR. G. C. ASHMUN, CLEVELAND, OHIO.

President of the Board of Education, Presiding.

DR. EBERSOLE. Ladies and Gentlemen, I have the pleasure, in behalf of The Cleveland Dental Society, to announce the opening of the Public School Campaign for Oral Hygiene in this city. In introducing to you the President of the School Board I am not going to make a speech. Dr. Ashmun, who presides, has been known in Cleveland many times over this year, consequently anything I might say in introducing him would be out of order.

There is just one distinction the Committee makes in connection with this meeting and that is that no speaker on the platform this afternoon will be permitted to talk more than ten minutes. (Applause.) And we expect Dr. Ashmun to call the speaker just a short time before his time expires, giving him an opportunity to close. As you notice, we have quite a number of speakers on the platform, and as it is planned to continue the program at the Colonial Hotel at five o'clock it will be necessary to close this meeting at 4:30, no later.

I have the pleasure of introducing to you Dr. Ashmun, President of the Board of Education of the Cleveland city schools. (Applause.)

REMARKS.

BY. DR. G. C. ASHMUN, PRESIDENT OF THE BOARD OF EDUCATION, CLEVELAND, OHIO.

The Chairman of the Committee, The Cleveland Dental Society, the Delegates and Visitors from abroad, Ladies and Gentlemen of Cleveland:

To be invited to preside at any meeting of people devoted to the object of promoting health, comfort and bodily efficiency is an honor to anyone, and to participate in any capacity and to any degree in carrying forward a work of such great promise of benefit as Oral Hygiene is sure to bring a sense of good service.

The oral or buccal cavity is the gateway of nutrition to all animal life and enters into questions of health and life as no other organ or part of the body can enter. And not only in respect to nutrition of the whole body does it hold its position of importance, but as an essential organ of speech and vocalization in all forms it is the natural channel of expression for a large proportion of the emotions and conceptions of the brain. The perfect development then of all the structures which enter into the formation of the buccal cavity—the mouth—as well as the preservation of those structures and functions becomes of the highest importance.

And this gathering of hygienists is not merely one of dentists engaged in urging a special department of surgery, but a gathering of the broad-minded and large-hearted citizens who, by reason of their studies and observations, have come to some appreciation of the causes and extent of diseases and defects affecting the mouth and the necessity for instruction to all classes and ages how such diseases and defects may best be prevented and relieved.

It is in furtherance of such aim that the Board of Education of this city school district has permitted and encouraged a demonstration of scientific efforts in this branch of hygiene as a further help in securing health and sound growth in the children attending.

The Children of Today—The Citizens of Tomorrow.

By Health, Vigor and Education, well balanced, will the preservation of all the civilization and virtues, for which this government stands in the eye of the world today, be most surely conserved. We occasionally hear an outcry against "specialism" and "specialists" in medical practice, with a charge that the "specialist" sees things through his specialty. And that "oral hygienists" are claiming too much for their branch of hygiene in comparison with specialists for other organs of the body. But it is a conservative estimate of specialism in medicine to say that men (thoroughly prepared), who have devoted their minds to a special subject, have added most to the sum of knowledge, not only in their special line and subject, but also in opening the way to advances in other lines of research.

The "open door" to the kingdom of knowledge is wide and leads into chambers not seen from outside.

The Board of Education of this city shares the hopefulness and confidence of the oral hygienists that a better care of the teeth and mouth of school children will lead to a higher average of bodily functions, including a mental and moral progress apparent to parents and teachers, With such a result gained, the men assembled here today, who have so largely contributed to the initiation and plan of dental examinations in schools, will, I trust, receive both now and in the future the reward of praise such self-sacrificing, humanitarian work deserves. The object is worthy of the keen minds and the generous impulses of you, gentlemen, who propose this large service to humanity. (Applause.)

THE CHAIRMAN. In the order of exercises for the afternoon we shall now listen to the Chorus of Boys from the Sibley School.

MUSIC.

(a) The Largo....................................Handel
(b) The Intermezzo................................Mascagni

THE CHAIRMAN. Mr. Elson, our Superintendent of Instruction in Cleveland, the schools of Cleveland, who is well known to you all, will present the address of welcome. I am sure we all shall enjoy hearing Mr. Elson.

ADDRESS OF WELCOME.

BY W. H. ELSON, B. A., CLEVELAND, OHIO.

Superintendent of Schools.

It is my pleasant privilege this afternoon to say a word of welcome, to welcome to our city these visiting delegates who are here to attend this conference, our citizens who are here and the teachers of the Public Schools.

It goes without saying that this meeting is one of very great significance. We are learning more and more that the conditions, which make possible that a child may enjoy with profit the opportunities which the public schools offer, are equally important with that of providing the opportunity itself. We know full well that the child, who has a temporary communicable disease, may return to school in a few days, and, being a reasonably capable pupil, he may regain himself, but the pupil who has difficulties such as this inauguration proposes to remedy returns to school only to be handicapped by his limitation whatever it is. And so this work, which is to be inaugurated today, is one of very great significance for the children of our city, and one of great significance—I should say—for the country at large.

It is, I believe, the first attempt to cover the three important phases of this work. It combines, first, inspection of troubles relating to the mouth and teeth, and for furnishing information to the teacher, to the school, and to the home. It combines, with that inspection, a provision for clinical service to those who are unable to meet the expense of such treatment; and, third, and perhaps best of all, if there is a best, is the lecture program, which proposes to place before young and old the preventives for many of the troubles which are to be treated by this inspection and clinical services. So the combination of these three features, that of education or the diffusion of knowledge for the prevention of these troubles, that of medical inspection for the locating of specific and individual troubles, and that of the treatment of the children of the indigent, if we may call it such, represents a very complete installation of this work.

I am sure every teacher recognizes the great advantage that will come to children from freeing them of those limitations which handicap them in the progress of their education. So I say again that that kind of work, which creates conditions which make it possible for children to profit by their schooling, is exceedingly important.

So we welcome this Convention here this afternoon, we welcome the progressive work which the Society of our own city and the National Society are inaugurating here. I think a word of compliment may be said very properly and very justly to our local society, and a word may be said with reference to the general form of medical inspection which our progressive Board of Education is installing in this city. This then for our own city and for the children of our schools means very much indeed. I take great pleasure in welcoming all of you to this feast of good things this afternoon. (Applause.)

THE CHAIRMAN. We have with us today, and I very gladly introduce to you, Dr. Grady of Annapolis, Maryland, who is the oral surgeon of the Naval Academy there, and I have no doubt is preparing the teeth perhaps of those seadogs who are to go out and meet the teeth of the wind!

RESPONSE.

By RICHARD GRADY, M. D., D. D. S., ANNAPOLIS, MD.

Dental Surgeon of the Naval Academy, and Member of the Oral Hygiene Committee of The National Dental Association.

Mr. President, Ladies and Gentlemen: It is not on the program, but perhaps I ought to tell you that I am not the one that should have responded to this address of welcome. It reminds me very much of a story told of the manager of a theater in Paris. The company was playing "Uncle Tom's Cabin," and a ferocious dog used to chase little Eva across the stage; but on one occasion the dog got a certificate—say from our President here—the dog was sick, and the manager had to come forward and apologize to the audience and substitute a little poodle in his place. (Laughter.)

There is another story in this connection that Dr. Ebersole is responsible for. I got a letter from him, and he has not only put it in writing but he has told me over and over again today and he has published it from the stage that ten minutes is the limit, and that reminds me of another story. There was a famous army chaplain who would hold his Bible in one hand and his watch in the other so he would not forget Time in meditating on Eternity! (Laughter.)

Now, I want to hold in my hand this little motto here, "Good Teeth, Good Health." It hangs in my office it is nothing but an advertisement, as you will notice from the back of it (indicating), but by pasting some blotting-paper in front I have removed the advertisement, and by the makeshift he, who comes into my office, reads, "Good Teeth," and as he goes out, "Good Health." And I pasted near that motto, "Good Teeth, Good Health," these words that you have on your program:

"Without Good Teeth there can not be thorough
MASTICATION
Without thorough mastication there can not be perfect
DIGESTION
Without perfect digestion there can not be proper
ASSIMILATION
Without proper assimilation there can not be
NUTRITION
Without nutrition there can not be
HEALTH
Without health what is
LIFE?"

I entered upon the practice of dentistry some thirty years ago—I ought not to tell it and happened to write a prize paper; we used in those days to have to do such things, write theses. I happened to win the prize. I had the paper printed, and in the back I put rules for having good teeth, and when I went to the Naval Academy in '99 I wrote a paper for the American Medical Association, taking this as a text again -"Co-Operation of the Public Schools in Teaching, 'Good Teeth, Good Health.'"

Edward Everett Hale says that every man and woman should have a vocation and an avocation. Now, my vocation is practicing dentistry but I think my avocation is Education. I am a normal school graduate, and my whole life has been in that direction. If I write anything it seems to be along that line— "Co-operation of the Public Schools in Teaching, 'Good Teeth, Good Health;'" "Oral Hygiene for the School Boy and Girl;" "Oral Hygiene for Public Schools and Institutions, and What Are We Going to Do About It?" That seems to be the thought I carry along and, before I forget it, I want to express my pleasure at the singing this afternoon. I don't know anything that was so inspiring to me as that I founded the first Manual Training School in this country as part of any public school system. We are ahead of you in that way at least; the Baltimore Manual Training School was the first, then came Philadelphia and Toledo, and Cleveland was No. 4. It was in 1883, and I would take the students from the Manual Training School—our average age was 16 1-2 years—around to different establishments. I am able to play a whole brass band myself but I would take my cornet with me, and we would sing at those places:

"O the Blacksmith's a hard, sturdy fellow,
Hard his hand, but his heart's true and mellow," etc.

And we would sing the Russian hymn, because this movement started in Russia.

Time went on and I got out of the schools, but even then I had to do work of this kind, so I formed the Club of the Four H's—The H. H. H. H.—"Helping Head, Heart and Hand," or "Help Him, Help Himself." You may take it either way you please! We had our own songs. One we would sing to the tune of "Maryland, My Maryland," like this:

"The H. H. H. H. Boys are we,
Of our beloved F. P. C.
Our heads and hearts and hands have we
To cultivate, O God, for Thee."

That "F. P. C." stands for "First Presbyterian Church," which gave us a $25,000 building to use for the Boys. Three hundred Boys are in this Club now.

"Our heads and hearts and hands have we
To cultivate, O God, for Thee."

we would sing; and we had another—also written for us:

"Our Club's the Gem of the City,
Those, who are not with us, we pity."

that we used to sing to "Columbia, the Gem of the Ocean."

So when I heard these young gentlemen sing this afternoon, it touched me, and I had to speak of it. (Youngster in the Chorus applauds.)

The President in introducing me said I was from Annapolis, and about the time I went to Annapolis—it isn't so now since Cleveland came in and helped us out—but when I went to Annapolis if you didn't get out of there by 6:25 in the evening you had to stay in all night, and if you didn't get in before that time you had to stay out. The road, that you built for us, has helped us and now we can get in and out any time clear up to one o'clock in the morning and every half hour. It has made Annapolis famous—your W. B. A. electric railway.

We are met in a great, busy, prosperous city, which has never been indifferent about its schools. You would hardly realize how this news came to me. 'Way last summer—August 27th is the date of this (indicating newspaper clipping) given me by a gentleman who went to your Camp Perry with no thought that I would go to Cleveland and certainly not on a mission like this. I happened to be the Chairman of the Commission on Industrial Education of Maryland, and that is where I ought to be today—writing the report for the legislature—instead of here, but knowing he was interested in manual and industrial training I was very anxious to see your Superintendent. I have seen and heard him now. And this is one of the things said about the Superintendent—it is from a Sandusky paper, the "Daily Register." I don't know what it means at all. (Laughter.) I hope I have not done any harm. "The

Superintendent of the Cleveland schools is evidently going to make a thorough experiment with the new movement with a view to meeting the needs especially of those boys and girls who are obliged to leave school at the close of the grammar grade.'' That is the thought, and that is why I kept the clipping. And then, as I came along in the train last night, what should I find in one of our local papers, our ''Baltimore Evening News,'' but this:

> ''A Cleveland paper prints an editorial bragging because its school expenses per capita are the largest of any city in the country.
>
> ''The heavy cost of the schools is treated as one of Cleveland's highest claims to be a city of fine civic spirit and enlightened ideals.''

(Applause.)

If I could only have done like your President, written my speech and read it: but I didn't know what the gentleman introducing me was going to say, so I had to wait and make up my speech after he had spoken.

I want to say a word about these clinics—I say ''Co-operation of the Public Schools in Teaching. 'Good Teeth, Good Health.' '' A friend of mine, a Roman Catholic, asked, ''Why do you say 'Public Schools?' '' Why, it never occurred to me to say anything else. And I think that is the right thing—don't say, ''Public Schools,'' in doing this work, but throw open the doors! I notice you here have done that—(referring to program) you have here four public schools and then you have the parochial schools. I want to endorse that attitude.

Before my thirty seconds are up, I want to say a word of Dr. Ebersole—''The Indefatigable,'' I call him. He has gotten me out here twice in three months, and mind, I didn't have the time to spare, but I am very proud and happy to be given this opportunity today to witness this inspiring sight and to address an audience of more than 4,000, including 2,100 teachers. But he has been an able organizer at the head of the Committee, and certainly special thanks are due him: and our thanks are, also, due to the newspapers for the recognition they have given this movement and as a guide and molder of public opinion. You should give thanks to your Superintendent and your President, and the School Board for dismissing the schools for this occasion. I want to say to you this movement is not a local event, but will spread all over the country. This is only the opening of the national campaign on oral hygiene in Cleveland. You know the questions are always asked, ''Where else? Any other city doing it?'' And you know we are going to try and repeat your success in Johns Hopkins University, Baltimore, in June. But the building is not big like this. When I go back to Maryland, my Maryland, and tell about this conference participated in by a Governor of Ohio, the Mayor of Cleveland, the President and Superintendent of Schools and other school officers and teachers, the personal representative of President Taft and health officers and dentists from other States, it can hardly be believed. I think you all know of the man who wrote "Pigs is Pigs"—well he also wrote "Teeth is Teeth!" (Laughter.)

Now, just one more word in closing—I would like to leave this thought with you. What do we live for if it is not to make life less difficult? We herald a day that is coming! "The hope of the race is the child." In the words of Dr. Osler, formerly of Baltimore: You have just one gospel to preach—I say that to the physicians, the dentists, the fathers, the mothers, teachers and all—you have one gospel to preach, and that is the gospel of the cleanliness of the mouth, cleanliness of the teeth and cleanliness of the throat. These three things must be your text throughout life. Oral Hygiene, the hygiene of the mouth—there is not one single thing more important to the public in the whole region of Hygiene than that. I thank you very much. (Applause.)

The Chairman. We are certainly very glad to hear these good things from Dr. Grady. I am sure, so far as this audience is concerned and the interest that is shown in this matter here today, has has not overdrawn the picture. We shall now listen again to this Chorus.

MUSIC.

WHY WE NEED ORAL HYGIENE IN THE PUBLIC SCHOOLS.

By J. W. Dowd, L. L. D., Toledo, Ohio.

Ex-Superintendent of Schools.

Mr. Chairman, Ladies and Gentlemen: It was the minute men at Concord and Lexington that fired the "shot heard round the world." I am glad to be one of the minute men, one of the ten-minute men, that are to fire the shots that I hope will be heard not only throughout all of Ohio but throughout the entire world! (Applause.)

Over a Grecian temple
there was the inscription, Γνῶθι σεαυτὸν

("Know Thyself"). Buddha, I think it was, said, "There is no sin but ignorance." With these sayings as a motive, this movement is inaugurated.

Health is the greatest possession in the world. Theodore Roosevelt said it was the greatest asset of a nation, and I sometimes think that Roosevelt's abounding health has been due to those splendid teeth of his, which are alike terror to grafters in America and lions in Africa! (Laughter.)

If there is anything the young people need to learn it is how to live, and there is no better way to teach them how to live and how to have healthy bodies than how to have good teeth. It is estimated that in this country only about 8% of the people, only about 8% of the pupils, pay any attention to the care of their teeth. Let us take a school room, because I am familiar with the school room. Suppose we have fifty pupils in a school room—the exposed dental space in the mouth, not including the tongue, is about 22 to 24 square inches; suppose we have fifty pupils, 50 times 22—somewhere around there—it is something upwards, if my arithmetic is good, of six or seven square feet. Now imagine that certain space, six or seven square feet, that we have claimed for teeth, covered with gelatinous plaques, pus from putrescent pulps and decaying food, an unclean surface in every school of 2 ft.x3 ft. If it was on the floor Dr. Ashmun would be notified. Mr. Elson would be notified, the Health Office would come out but they would not need to come out because you would have already cleaned it up; but in the mouth it is where you can't get at it very well. The pupils themselves can get at it, and that is one of the aims in this campaign, to have everybody take care of himself. I have been in the campaign a little already.

There are a few things your pupils should be taught. One is that a clean tooth never decays. There was an old Roman who, when asked why his statue was not in the public place said he would rather have people inquire why it was not there than why it was there. He saw Carthage coming into prominence, bidding for power and glory, and he always concluded all his speeches with the declaration "Carthage must be destroyed." And so I want to go all through the schools of this country this statement—I was going to say it should precede every lesson, it should be prominent in every school room—a clean tooth never decays. Let us sound it from one end of the land to the other.

Another thing the children should learn, is the importance of the primary teeth. Why, do you know there are people in this country who get into quarrels with their fellows as to whether Cook or Peary discovered the North Pole, who don't know how many primary teeth there are in the mouths of their children and how many should be there. Keeping your teeth clean, keeping them until they have done their work and fall out like ripe apples from the tree to make room for the teeth waiting to take their place should be taught. They should know that the strength and symmetry of the jaw depend upon the retention of theprimary teeth until they had done their work.

And another thing that the children should know—things that parents don't know apparently—and that is the molar that comes into a child's mouth at the age of six years is a permanent tooth. It is mistaken by many people as a temporary tooth and allowed to decay, and if it does the whole jaw falls in irrevocably and perfect occlusion of the teeth is forever destroyed. There is a crime in law known as "mayhem," depriving a person of a member necessary for the protection of the body, and whoever extracts the six year molar from the mouth of a child unnecessarily is guilty of the crime of mayhem against that child; and I would have it told in Gath and have it published in Askalon and proclaimed from the house tops that whoever extracts that molar is aiming a blow at the health, strength and beauty of a child! (Applause.)

Another thing that a child should know and that is that there is no need of a child being irreparably handicapped by irregular and deformed teeth, by a mouth made so from mouth breathing or other cause. Every child should know there is a remedy for that, and I want to say now I take off my hat to those dentists who can take weakness and turn it into strength, who can take ugliness and turn it into a thing of beauty, who can take the shame and humiliation that a child having that sort of a face must possess and turn it into a noble pride and dignity of character. Why, I heard yesterday of a father whose child had a deformed mouth—he went to his dentist and asked what it would cost to have it remedied. The dentist said he was not experienced, did not know, but he would make a cast of that mouth and send it to a doctor in Detroit and see what it would cost. The father was worth hundreds of thousands, and when word came back that it would cost $300 the father could not stand the expense! As it is now the child walks in shame among his fellows; as it should be, the father should walk in shame among his fellow men. Dr. Gulick, after carefully investigating this matter, says that two defective teeth in the mouth of a child will retard him for half a year, six months, in the school year, and adenoids will keep a child back a year.

It is a matter of economy to the community to take care of its children. We have made a great stir in this country about pure food, and we have taken extra measures by law to see that the food is pure. The housekeeper takes pains about her dishes and all in connection with the culinary department, but, Ladies and Gentlemen, if it is a choice in any household between pure food and clean dishes and clean mouths, have the mouths of your family clean, for what avails it to have pure food, what avails it to have clean dishes, if it is going into mouths that are the breeding-places of disease of all kinds!

If a man was down here on Euclid Avenue and should shoot from a dark window into the street he would be doing no more than the men and women are in this country who have points of disease, decayed teeth, in their mouths, filled with deleterious bacteria, who are going around among their fellows breathing out, expectorating everywhere, giving all the diseases they have to be put into the dust and breathed into the mouths of the people who traverse our streets! (Applause.)

Longfellow says:

> "There is a Reaper, whose name is Death,
> And, with his sickle keen,
> He reaps the bearded grain at a breath
> And the flowers that grow between.
> 'Shall I have naught that is fair?' saith he;
> 'Have naught but the bearded grain?' "

I say no, a thousand times no, the flowers are not for the Harvest but for Health, and I like to think that I am in a campaign that will do much toward bringing about such conditions that every child born into this world shall have a fair chance of living to its three score years and ten, and, if by reason of strength, they should be four score that the ten added years will not be those of labor and sorrow but will be delightful, mellow years of a green old age!

War, pestilence and famine have done their deadly work in the world. The Poet sees the time coming when "the war-drum throbs no longer, and the battle-flags are furled, in the Parliament of Man, the Federation of the world." Famine—we are getting the upperhand of Famine. We know how to store food, but we don't know how to give it out and charge the right price for it—we will learn that after awhile! And we are after Pestilence. It is safe to live in Cuba, safe in the Panama Canal zone, it is safe in New Orleans. It should be just as safe anywhere.

I read in the paper this morning that twelve thousand people in Cleveland have tuberculosis and are marked for death. We will never conquer the great White Plague with the arm that ought to meet it until the children of this generation are armed with that knowledge to know how to combat that dreadful disease. That is the campaign we are in! (Prolonged Applause.)

Talk about conservation of public domain, get into quarrel about that—the most important public domain in this country, the most important possession of it is the boys and girls, and the movement you are inaugurating here today is of greater importance than any movement for the conservation of the physical resources of this country, for after all what constitutes a state? It isn't cities, it isn't towns, it isn't armies, it isn't farms, it isn't navies, but it is men, men that know their rights and knowing dare maintain! And so I would like to fire the imagination of this audience with the idea of a world that is free from disease. Why, you know the world is just getting to be a fit place to live in, and it is our business to make it a better place than it is today. Let us get to work at it. How can we do that? By beginning with the rising generation. Boys and girls properly trained in school, properly taught these methods of cleanliness, would mean clean homes, would mean clean cities, would mean a clean nation.

I know my time is up. There are just two thoughts I want to leave with you. St. James said, "The tongue is a fire, a world of iniquity; so is the tongue among our members, that it defileth the whole body, and setteth on fire the course of nature; and it is set on fire of hell." If St. James had been giving the description of an unclean mouth from a modern sanitary view he could not have done it any better than he has done it there. So the text that is to be preached from all over this country and the text that will result in a better race for the future is this "Keep the mouth clean with all diligence for out of it are the issues of life." (Applause.)

THE CHAIRMAN. We have with us this afternoon another representative of the instruction corps of our schools. I present Mr. Muckley, Assistant Superintendent of schools.

OUR INTEREST IN THE WORK.

BY HENRY C. MUCKLEY, CLEVELAND, OHIO.
Assistant Superintendent of Schools.

Mr. Chairman, Ladies and Gentlemen: The ears of the Public Schools of this city have ever been open unto the cries of childhood. We believe in the unity of man. Dr. King, of Oberlin, has made some splendid contributions to the idea of the roundness, the unity of man: Not only is he a spiritual being, not only is he an intellectual being but he is a physical being—I had almost said above all, but I will say below all, because down at the very bottom, the substratum of life, in some mysterious way lies this wonderful organism of ours.

It is Robert Browning who analyzes man perhaps as no other poet has ever analyzed him, and in that splendid poem, "The Death in the Desert," in which he gives us scenes more or less imaginary, doubtless being the death of the great Apostle John, he makes him enunciate his great doctrine concerning man, wherein he says there are three souls, the first soul consisting of the bodily parts—the bones, muscles and tendons, the ligaments and nerves, the capillaries, all a wonderful mesh of tissue. He styles that soul the "what does"—a somewhat Brownonian phrase, but he calls that the "what does," the thing that manifests its activity , that acts upon nature and is reacted upon by her. But out of this "what does" there grows a second soul, conditioned downwards upon this first one and growing upwards out of it. This second soul is the "what knows," the soul namely that projects, that reasons, that analyzes, that soliloquizes; and then growing out of that second soul is the third one. As the second grew out of the first, so the third grows out of the second. And he calls that third soul the "what is" in recognition of its essential nature that somehow in that there is included the very substance and essence of human life. And so we have that mighty ladder, that tremendous progression, beginning down here with the bodily parts and moving upwards into that region that we call the head and still upwards into that third region that we call the spiritual life whose utter limit is not, for it toucheth the infinite itself.

We leave today that third thing, we don't consider it, interesting as it is. We are not now considering that second thing as we ordinarily do in public school work, but we are turning our attention back upon that first thing, that "what does," and the public schools of Cleveland are interested in the education of the physical child. There is no step that has been suggested within the limits of reason that the public schools of this city have not taken. Our Board of Education has been touched with the feeling of the infirmities of children and they have provided playgrounds; they have provided overseers of these playgrounds; they have provided dispensaries wherein the physical ailments of our children may be attended to, where little children come from the buildings and from the neighborhood roundabout and there some kind one, like the good Samaritan on the way to Jericho, pours in the oil and wine, and more that that, pours in the human sympathy, too, which is so much in human life. We have recognized the importance of the cleanliness of the outer body, so we have put natatoriums in our school buildings to some extent, and in all these things we have recognized the importance of this thing which is the foundation. Without the foundation this second thing, the "what knows," could not grow out of the first, because it is upon the integrity and health of this first thing that this second one is conditioned; and that is the explanation, Mr. Chairman, as I understand it, and fellow teachers. of this movement. We are not here following a mere chimera or "*ignis fatuus*," we are here dealing with actualities, with things that are real and things that will contribute not only to the particular thing sought, not only to the end that our children may have a thorough masticating apparatus and therefore may have a thorough assimilation and a thorough circulation and a thorough nutrition—I like to follow out that line in the direction of citizenship—without good sound teeth no mastication, without mastication no complete digestion, without digestion no thorough assimilation, without assimilation what becomes of the disposition? It becomes degraded, it becomes harsh and sour, and the end thereof is not sound government, is not nobility of life and character, but the end thereof is anarchy and all those things that men, who do not feel good within themselves, are trying to put upon the world without! (Applause.)

I want to express, so far as I have any thought in this matter, the entire sympathetic cooperation of the public schools of this city in this work. I believe it will contribute not simply to the health of the children but, as has been said, it is an economic measure which will contribute to the better thought, better life, better spirit, to the elevation of all those flowers of human life which blossom out in spirituality and intellectuality. (Applause.) So I say that this movement today meets with our most hearty cooperation, and, as upon the particular subject on which I am to speak or have spoken, for I fancy my ten minutes are almost expired, "Our Interest in this Work,". I say unequivocally, our interest in this work has already existed. We need but to have these things pointed out to us, and we are ready to spring to the action that will lead to the bettering of the school life and condition of the children of our public schools. (Applause.)

THE CHAIRMAN. I wish to say that the next address will come from a member of the Board of Education that has not only given evidence to the City of Cleveland of her ability and interest in everything pertaining to the welfare of the schools, but has exercised a modifying effect upon the members of the Board themselves. I introduce to you Mrs. Hyre. (Applause.)

IMPORTANCE OF LECTURES IN THE SCHOOL BUILDING.

BY MRS. SARAH E. HYRE, CLEVELAND, OHIO.

Chairman of Free Lectures and Social Center Work of the Board of Education.

This campaign for healthier conditions of the oral cavity of all children of growing age, which is being carried forward by the national, state and local dental societies, not only in our own community but in other communities throughout the state and country, is one of education, and in so far as it is educational it deserves the support and thorough consideration of every school body. If the material we have had presented to us here today, if the splendid instructive things which have been said, are to reach out and beyond the benefits which we have received, those said, are to reach out and beyond this assembly, if the community at large are to realize that an unhealthy condition of the oral cavity is a handicap to our boys and girls in their school life, then there must be some means of disseminating this information. The Cleveland Board of Education five years ago declared for the larger use of the school buildings for all educational purposes, and today every manner of work along educational and helpful lines is being conducted in the school buildings under the direction of a committee in the Board of Education.

A few months ago the Dental Societies came to the Board with a request, which was unanimously granted, that they be permitted to carry on a course of lectures in the public schools upon the importance and care of the teeth, these lectures to be given to parents, pupils and teachers. I feel warranted in saying that the general feeling prevailed in the Board that only the good of the great mass of public school children was involved in the request. (Applause.)

This convention, the opening up of the clinics this morning and the general plan of work for the coming year in inspecting the mouths of all school children is to be followed by a course of lectures to be given in connection with the work. If these lectures are to be of the greatest benefit to the community, if they are to serve the purpose intended for the pupils, they must be given in simple, plain English, and illustrated with pictures, so that not only the upper grade children may readily understand but that the foreign population, who know very little English, may by associating the pictures and the simple language be able to comprehend the truths that we have had presented here to us today.

I am sure that I need not take your time to persuade you as to the value of these lectures in the school buildings. If the work of these organizations is to be effective, if the growing children of our city and other cities are to receive the benefit from this kind of a campaign of education, then we must have the co-operation, the intelligent co-operation of the parents. (Applause.) We must have the co-operative support of the children themselves, and then last but not least we must have the moral, supervisory and sympathetic co-operation of the teachers.

I want to say just one word in conclusion, and that personally I hope that this demonstration, that is being carried on in Cleveland, will be so practical, so definite and so conclusive that it will serve as an argument to other communities and other official boards.

THE CHAIRMAN. The next in order will be an address from Dr. Jackman, who is Chairman of the Education and Oral Hygiene Committee, Ohio State Dental Society. I introduce to you Dr. Jackman.

THE STATE WORK.

BY W. T. JACKMAN, D. D. S., CLEVELAND, OHIO.

Chairman of Education and Oral Hygiene Committee, Ohio State Dental Society.

Mr. Chairman, Ladies and Gentlemen: What I have to say will be said in very few words.

Out of a paper read before The Ohio State Dental Society several years ago on the "Care of the Teeth of the Indigent Poor," advocating particularly the care of the teeth of the unfortunate inmates of our eleemosynary institutions, has come the doing of more or less of dental work in all of them, the superintendents using some of the yearly appropriation for this purpose, although not strictly according to law.

A man is supposed to be insane. He is taken before our Probate Court and is adjudged insane. He is sent out to the Newburg State Hospital for treatment. Now suppose, if you please, this patient is suffering from dental caries, decay of the teeth, we call it. Suppose he has five or six diseased teeth and suffering from all of them—do you suppose that all the good physicians out there, with all the sanitary conditions for the restoration of health, can restore him to mental balance when he is thus suffering? It is absolutely impossible, and I am sure you will agree with me in that—it is absolutely impossible! The proper thing for the state to do under such circumstances, I think you will say with me, is to place a dentist in such an institution. "Well," some will say, "that is hardly necessary; extract the teeth that are giving the trouble." That is a thing you dare not do—you have heard why here today from Mr. Dowd. If a man loses his teeth you maim him for life. You have heard what the loss of teeth means—loss of assimilation, nutrition, etc. -and so The Ohio State Dental Society is working to the end to place dentists in all these institutions, and we shall have them there before very long! (Applause.)

The State Society had done but little before last year in Oral Hygiene. A beginning, however, was made last fall. The dentists of Youngstown, Canton, Delaware and Gallipolis examined the school children of their respective cities. The children of Massillon and Findlay are being examined at the present time.

There are three members of the Educational and Oral Hygiene Committee of the State Society. They have divided the state, as to counties, into three divisions, each having a third of the state to work in. We hope to reach the children in a very large percentage of the cities and towns through the members of the State Society. Next year we shall add the lecture or educational side of the work, possibly do a little of that this year. The larger cities of the State will carry on both simultaneously this year. The Ohio State Dental Society is made up of the various local societies of the State, called component societies. Through these component societies we expect to reach every town and township in the state and, my friends, permit me to say that this work will be carried on until every child in the great State of Ohio shall enjoy the blessings that will come through this humanitarian movement. (Applause.)

You have just listened to some of the reasons why we need Oral Hygiene in the public schools. The work is being carried on this year throughout Ohio without any cost to the taxpayer; but you, Mr. Taxpayer, must foot the bills hereafter. But, as paradoxical as it may seem, I could prove to you, if I had the time, that to do this would be money in your pocket. The time has come when the teeth and faulty oral conditions of the indigent poor must be looked after and the only way is through legislative appropriations. After all, my friends, this movement is only another way of giving the cup of cold water in His name.

Well, my time is up, but I want to say that I have my opinion of this National Committee that will put a man on the floor to speak to an intelligent audience like this and then limit him to five minutes on a subject that is almost inexhaustible.

Now, Mr. Chairman and friends, I want to leave this one thought in particular with you; think about it, and then think more about it, and then assist the physicians and dentists of this great state to practically demonstrate the truth of this statement I am about to give you. The statement is this: "The conservation of the health of her people is the first duty of the state!"

The Chairman. Dr. Jackman has given us some of the work in the State Department of Hygiene, and now we will have a statement of the local work from Dr. Price.

THE LOCAL WORK.

By Weston A. Price, D. D. S., M. E., Cleveland, Ohio.

Member of Education and Oral Hygiene Committee of The Cleveland Dental Society.

Mr. President, Members of the Board of Education, Boards of our

Public Institutions, Ladies and Gentlemen: As I address this large and very intelligent, and therefore critical audience, my responsibility is very great, but it is not so great as the responsibility of any one of you teachers who go to your classes on Monday morning to instruct them with the interpretation of the Book of Life and Health. You notice that beautiful class of fifty boys. Do you realize that if they grow up as the average man of the past decade has done, by the time they are thirty not half of them would be accepted by Uncle Sam to even do post duty in the army, because they would not have teeth good enough to pass the examination. Do you shudder? When, and when only, could those teeth be saved? Only when they have them, only when they are children, and there is your responsibility! For their fathers and their mothers do not know the responsibility and you do! And I want to say to you that just as the "pen is mightier than the sword," so the tooth-brush is mightier than the dental profession; and if those children can only be taught that great necessity, that great lesson, while they are young, you have given them a legacy that is greater to them than to give them a thousand dollars in gold.

A decade ago, when this Committee of The Cleveland Dental Society undertook to bring this matter to the Board of Education, the then superintendent, Mr. Jones, said to us, "I am in sympathy with your work, but alas, politics and public sentiment will not allow me to take it into the schools." He said further, "I would give five thousand dollars today if somebody had taught me, when I was a child, how and why I should save my teeth." And you have that privilege to teach every boy and girl in your classes that great truth. Some day a young man will come to you and he will say, "I am indebted to you five thousand dollars for telling me how and why I should take care of my teeth." (Laughter.) How many boys in the school room? You will have a great legacy for your old age!

If you would go with me to the museums in Colorado City and look over with me the skulls of the cliff dwellers you would be appalled to find not one instance of decay of the teeth in any one of the skulls of that collection—at least that was the case last summer! What does it mean? Our civilization, that is growing up today, cannot produce one man in five hundred with such a set of teeth as that collection shows. Do you realize that in that institution, that Dr. Grady serves, only two per cent of the men that apply for entrance to that Academy do not require dental attention before they may enter. This generation, and to the great alarm of this entire community it should be, has not anything like the good teeth of that former generation. Think you that those Norsemen, who pushed the keels of their vessels up onto the sands of Ebbsfleet to make that great Briton, could only furnish one man in ten with a set of good teeth. which is the best that the men of today can, or of those early colonists, that came to our shores, those sturdy men, that they could only furnish one man in twenty with a tolerably good set of teeth?

I want to say to you that the responsibility upon you, as the educators, is alarming, and The Cleveland Dental Society has had this work in their hearts and in their hands for a long time and they are now going to co-operate with you and help you reach this great mass of humanity, the children, and the method is very simple. The examination blanks, such as you have in your hands, when they are made out, will be sent with the pupil to the parent by the examiner, with the request that the parent have the indicated necessary service attended to. There will be another slip put into your hands which will state, ''I, the undersigned parent, am not able financially to take care of the teeth of my child, and I will appreciate the service of the free clinic.'' The signature of the parent and teacher are the credential for the free service of the dental clinics.

If you only knew how many times you lost your temper because those children were so irritable, just because they themselves were poisoned with something that you in this age might remedy, you would take heart interest in this work.

Just a few days ago a mother brought her little boy to me and said, ''you needn't do anything to his temporary teeth, just fix the permanent ones,'' as he had four permanent ones, because he was six years of age when she said, ''Don't do anything with the temporary teeth.'' I said, ''Do you see this suppuration?—it is abscessed. You are not going to leave it this way?'' She said, ''That will not hurt him any.'' I said, ''You watch your child, if you are going to keep that condition there, and see if his rest has rested him and if he isn't quarrelsome and irritable when playing with his fellows, and loses his patience, perhaps has headache, perhaps acute indigestion; if he has any of these symptoms, beware, for you will get them from that much infection,'' for I want you to know that almost any abscessed tooth will furnish from half an ounce to one ounce of pus every twenty-four hours, that either goes into the system through absorption or through the stomach. She said, ''Dr. Price, that's just what is the matttr with my boy now, he can't play with his own brothers without quarreling all the time, the teacher can't get along with him at school.'' I treated those three abscessed teeth that day and the next week when she came back she said, ''Those symptoms have entirely disappeared, he gets up rested and plays agreeably with his playmates and his digestion is regular.'' I want to say that probably in every classroom in this city there are such cases as that, there are doubtless thousands in the city, Mr. President, of just such children being poisoned and being whipped and punished when really the only trouble is the septic poisoning they have to fight, and the Cleveland Dental Society has volunteered to take care of gratis, for this coming year, those children whose parents can't afford to pay for this service.

In this system it is very important that you co-operate to the end that we have a very liberal attendance at the lectures. We have twenty lecturers from our organization going out to do this work, and I want to say in closing—to just change the words of Goldsmith a little, I would declare:

"Ill fares the land to hastening ills a prey,
Where gums accumulate and teeth decay."

Mr. President, I congratulate you as President of the Board of Education of this city, and you members of that Board, and the officers of the educational societies of this city, and parents and teachers, upon having the opportunity of furthering this good work, and in turn, I want to congratulate this generation that they have officers of your liberality of conception and character and purpose to carry out such a worthy enterprise.

I am reminded to emphasize tonight's meeting, and I want to say to you teachers that you will thank me for urging you, if you will come tonight and hear Dr. Evans in the splendid address he will give in tracing septic poisoning through the system and the effect upon a young life. You cannot afford to miss it. (Applause.)

THE CHAIRMAN. I scarce need to add to Dr. Ebersole's remark about the next speaker being little but mighty. Dr. Corley comes from far south to speak to us. We shall all be very glad to hear him.

SOME OF THE DIFFICULTIES WE HAVE ENCOUNTERED.

BY J. P. CORLEY, D. D. S., GREENSBORO, ALA.

University of the South, Member of Oral Hygiene Committee of the National Dental Association.

Mr. Chairman, Ladies and Gentlemen: I came a thousand miles to bring you a message from Dixie, and I have only ten minutes in which to deliver it. Now, I have learned that the two most difficult things in life are to talk to a young lady who is expecting another beau and an audience which is tired, so I am going to ask your gracious Chairman here to count out my time while I tell you a story, and I am going to ask you to do me the courtesy to stand and rest your tired bodies while I tell you this yarn. I was charged in particular not to make this experiment, because I was told that if I ever once allowed this audience to get on its feet they would have to lock the doors to keep them in, but I am going to risk it!

My little town in Alabama has the distinction of being the birthplace of Samuel Monroe Hosmer and Richard Pearson Hobson. You all know Hobson. A few years ago we succeeded in putting him in the Congress of the United States. He immediately got busy and went to the Secretary of Agriculture and said, "I live in a little agricultural district and I wish to take my people a message which will enable them to be better citizens and more successful business men and build up my district.

I wish you to give me all experts and canvass the institutes through my section and teach the farmers how to farm.'' Secretary Wilson said, ''I will do it,'' so Captain Hobson came down with his experts, and he and one of the other members of the Department in going their rounds chanced to meet an old farmer driving a drove of hogs in front of him. Stockmanlike they said, ''Mr. Farmer, where are you taking those hogs?'' He replied that he was going to turn them loose on a ranch, and in a year or two gather them up and convert them into meat. They said, ''Hold on, we will teach you how you can save. If you will have your meadow sown with forage crops, and have movable fences and turn your pigs from one to another, and give them a little grain during the season and then in the fall before cold weather give them a little more grain, you will save twelve months' time and they will make better meat.'' The only thing that struck the farmer was the proposition of time. He looked up at the expert and said, ''What to Hell is *time* to a hog!'' (Laughter.)

Gentlemen, I want to tell you in the first place that I am discussing this subject under protest. I don't like to talk about opposition, I like fair winds in an open sea, and I told the Chairman of our Committee I could not do it, to give me something I could do. I don't know anything about this opposition element on the part of school boards, and by the way I want to tell you when I was first assigned this subject of the opposition which we have met on the part of the school boards—now, you know I could not come up here to Cleveland, a stranger in a strange land, and meet an audience of pedagogues such as you and whack them over the head with a subject like that, so I just rebelled. He said, ''All right, come on and we will fix you up.'' I said, ''You want me to talk about the oral opposition. Now, we have met and being meeting for the last ten years, and I am going to keep the muzzle on; you can't tell it in this campaign, because it is not expedient.'' I have learned that when Dr. Ebersole says to do a thing you might just as well get busy and do it. In fact, there are only two people I know can make me do a thing I don't want to, and they are Dr. Ebersole and my wife. When either one of them says to do a certain thing, then just such or so—''I don't have to do it, I have an alternative—I can die!'' Now I expect in this instance I will have the experience of the Light Brigade—I will have to both do and die!

We have met a little opposition on the part of the school people, but that was to be expected. It would be unreasonable of us if we didn't, if we expected anything else. Now, in order to discuss this subject with anything like the prospect of a helpful outcome, my purpose in the discussion should be to develop a plan whereby we might overcome this opposition in the future, and to do that in ten minutes! (Laughter.) Why, we would have to go back to the grandmothers of these pedagogues and discuss their environments right down to the present time in order to get a fair viewpoint. They are honest in it, and I want to say to you at this time that I believe that of all professions and of all vocations under the sun the teacher is doing more on shorter pay to develop the human race than any other, and if there are differences in our final reward, if there are higher seats in Heaven I will look on the pedestal to find my school teacher.

Now, we appreciate the handicap under which you are laboring. We know you have an insufficient room, that you are short of equipment, and, teachers, we know that you are concerned in regard to the home environment of your pupils, many of whom have insufficient clothing and food. Those facts have been brought home to you by philanthropic societies throughout the country, and they have been impressed upon you in such a way that you have taken the matter as part of your work. And so the public has been educated up to these things, whereas of the septic evils of the country we have said nothing, so we don't criticise you for opposing the movement, because it would be unreasonable to expect you to understand the movement as we dentists do.

In the second place, you have not been told of the prevalence of oral and dental diseases. The man, whose business it has been to tell you this, has been too busy in his daily routine of office practice to go into your institutions to make examinations and submit data and statistics which would prove to you the awful prevalence of diseases of the teeth.

And then again, thirdly, another feature of the question—you haven't been told what the effect of prophylaxis of putrescin would be. The dentists are too busy patching up broken down grinders to tell you how you could, by systematic regimen, remedy the necessity of patch work in your mouth.

And the fourth reason is that the school boards and superintendents of education and the public school teachers occupy their positions in a large measure at the hands of the public voter, and so you feel as if you were under an obligation, your duty is to carry out the wishes of your constituents, and there is a good reason for maintaining that position too. I don't think it is for the reason that a man wants to hold his job that he caters to public opinion—I don't think that is true; I think he honestly believes he is representing the voters of his district and his business is to express their wish. Of course, there is another side of this question, and the better class of our educators, and I am glad to say I believe Cleveland stands at the very head of the river in this, are undertaking to educate the public and develop public opinion to the point where they will endorse this appropriation.

Cameron, the diplomat, says: "I know where you will find more wisdom than in Napoleon and Voltaire—it is in public opinion." So it reduces the proposition simply to this—in order to institute our program as we have laid it out and wish to do we must educate public opinion.

Now, I want to say a word about these taxpayers. We owe them a duty in place of blows, and we ought to educate the taxpayers up to the philanthropic and economic knowledge point of information where they would be willing to finance this scheme. A taxpayer will holler every time a tenth of a mill is added to his tax bill. It reminds me of the instance of an old coachman we had in our family for three generations. In his old age he took unto himself a young wife, and she proceeded to make it interesting for Uncle Tom. One day he came in to my wife and said, awfully crestfallen, he says, "'Fore Gawd, Mis' Julia, that yaller gal goin' to run me plumb crazy." "What's the matter, Uncle Tom?" my wife asked. "Why she dun ask me fo' money, money all th' time; she ask me fo' dollah and a dollah and last Tuesday she ask me fo' two dollah and this morning she ask me fo' five dollah." "Well, Uncle Tom, what does your wife do with so much money?" "Lawd mercy, Mis' Julia, I dunno, I ain't given her any yet." (Laughter.)

Now, you know that paying is a matter of education, and that simply through the process of education we can develop a public sentiment that will demand us. I had a conference with the superintendent of education in New Orleans the other day, and he told me he was heartily in favor of financing this scheme in the City of New Orleans. I said, "We don't want you to do that right now. We propose to institute the work and look after it for twelve months, and then submit to your taxpayers data that will show them they can afford to finance it and make it a paying proposition.

Two years ago the mayor of Nashville, in introducing me before a public audience in New Orleans, under the auspices of the Academy of Medicine, said he was willing to use his influence to undertake to get the taxpayers of his city to finance the scheme. We agreed that the next time we came to town he was to be sent to a dentist, have his teeth examined and put in order and placed on probation. He stands next to that illustrious Colorado man who said at a similar meeting the following week that he was not only willing but anxious to use his personal and official influence in order to bring the same thing about. In Birmingham was the same thing, in Mississippi, Meridian. The harvest is ripe for the reaping, and the obligation lies upon the dental profession to put it into effect.

One last word. A young clergyman went into a new parish and wishing to make a propitious entrance into the new field, began to prepare a sermon. Just at the psychological moment one of the parishioners died and he was called upon to perform the burial service, so he thought that certainly the hand of Fate was playing unto him. He sent for the son, the young son of this gentleman, and said, "Now, son, I want to make it as romantic, as pathetic as possible, and I want you to tell me what were your father's last words." The little fellow spoke up, "Pa didn't have no last words, Ma stayed right with him."

Now, I want to say one last word about this subject of oral hygiene and prophylaxis. It is one of the most interesting, most enthralling subjects under the sun. Only there is one difficulty in looking ahead—I am afraid my wife and babies will go hungry—but I want to make a start in that direction. To give the experience of one of our dental manufacturers, I show you this letter, which I hold, of a man who forgot every other purpose in life and felt as if he was called upon to preach the gospel of sound teeth! It is like the instance of the old negro preacher we have a great many of those, you know, at home. We have ten colored people to one white man where I live. There are a great many preachers among them, and of these two reverends in my neighborhood one claimed he preached on "inspiration" and the other said he had to preach on "perspiration!" He said, "Brethren, you jus' talkin' about dis thing inspiration, dere's nothin' to it, you'se jus' got to get down and work fo' it." The other said there was no such thing as working for these eternal truths, "you'se jus' got to make yo'self open and receptive," that it was the duty of the world to make a funnel of the top of their heads to pour his knowledge into! They agreed to debate the subject, so during the revival service they went forward, they were going to discuss this subject in meeting, so they came together and the "inspiration" brother occupied the pulpit and gave out a song and offered prayer and said now he was ready for the text. "I can preach on any text you have a mind to submit to me," and would "my brother take any single word, one syllable word," and he would preach something. He said, "You jus' take and preach on 'pill'—p-i-l-l." So he starts himself. He says, "Brethren and sistern, there is pills for the liver, there is pills for the heart, there is pills for the kidneys and pills fo' every part, there is pills fo' the feelings and pills fo' the head, blue pills and pink pills, pills for every complaint under the sun; there is Mr. Tuttle's pills and Mrs. Aunty Pinkham's little pills fo' pale people, little homeopathic sugar-coated pills, all kinds of pills yo' can imagine, but I want to tell yo', bretheren and sistern, there is only one pill for the soul's good will and that is this blessed ole gos-pill!" (Laughter.)

And so after all, when we study the purposes of human life and the will of the Architect of the mind and body, we are forced to the conclusion that the highest purpose of man on this earth is to co-operate with his Divine Creator in an effort to evolve the perfect man, and so I want to leave this thought with you as a reward; whether or not the reward comes after it makes little difference, but it is a beautiful thought:

"When Earth's last picture is painted, and
The tubes are twisted and dried,
When the oldest colours have faded,
And the youngest critic has died,
We shall rest, and, faith, we shall need it,
Lie down for an aeon or two,
Till the Master of all Good Workmen
Shall put us to work anew."

Dr. Ebersole. I am sure I only voice the sentiments of this gathering when I express our thanks to the gentlemen who have talked this afternoon. We will close by rising and singing "America," the last verse only. Director Jones will lead us.

"Our fathers' God! to Thee,
Author of liberty,
To Thee we sing:
Long may our land be bright
With freedom's holy light;
Protect us by Thy might,
Great God, our King!"

EVENING SESSION

Dr. Ebersole. Ladies and Gentlemen: I have the pleasure, on behalf of the Hygiene Association, to open this meeting. Before introducing the presiding officer of the evening I wish to say that owing to gymnasium exercises at one of the other schools that was to be represented in the chorus this evening, we only have a portion of the ladies present.

In introducing to you the presiding officer of the evening, I can only say to you that any attempt upon my part to introduce a man who is so well known in Cleveland, so well known in the state and so well known in the nation, would be presuming; therefore I shall simply introduce to you Ex-Governor Herrick, the presiding officer of the evening. (Applause.)

REMARKS BY HON. MYRON T. HERRICK, CLEVELAND, O.

Ex-Governor of the State of Ohio.

Mr. Chairman, Ladies and Gentlemen: I am somewhat surprised at my temerity and courage in facing so many dentists. I have found it very difficult to summon up courage enough to meet one recently. But I shall not occupy very much of your time, for the reason that we have a program here of these gentlemen who have come from abroad to speak to us on a subject which has awakened not only local but national interest recently, and I don't know of anything more eloquent than a little clipping along this line I made from a newspaper yesterday, which I will read to you:

"Boston, March 11, 1910.

"Thomas A. Forsyth, a wealthy resident of this city, plans to give two million dollars for the care of the teeth of Boston school children.

"As a perpetual foundation by which every child in the city from birth to the age of sixteen years may receive the most expert dental service free of charge, this donation will prove a boon to those of school children who otherwise would never have this care.

"The money, with a part of which will be erected a building equipped with every modern apparatus known to the dentists' art and manned by a corps of the best dentists in the state, has been set aside by Mr. Forsyth, and only the passage of a bill petitioning for the incorporation of his idea by the legislature stands between the plan and immediate realization.

> "The proposed dental infirmary will be the most unique institution of its kind in the country. The Forsyth Dental Infirmary, the name given to the new institution, will be in Hemenway Street in the back bay, where several thousand feet of land has been purchased.
>
> "There are no restrictions placed on the fund other than those outlined by the corporation which will have charge of the enterprise. A board of directors, etc."

all of which is detailed. I think that speaks most eloquently for the cause in which our efforts are engaged here. It seems to me—perhaps I am speaking for myself—that we have little realized the importance of this wonderful undertaking. We have known for years of the progress of this profession, but I think we have little realized that upon the correct understanding of oral surgery depends the welfare and the health of our community. While we are engaged as a government in the conservation of our natural resources, it seems to me that we have overlooked, until these gentlemen who see beyond the dental chair have discovered, that the people were not cognizant of the dangers that lurked everywhere in the way of disease in our public schools and throughout the community generally. And they are coming together here and preparing for a campaign of education which will arouse the people to the necessities and demands, for the health and comfort of the people is something which should interest every citizen.

The proposal to establish free clinics in the schools—I confess my ignorance as to the advancement that has been made and as to the need of the efforts and cooperation of all good citizens in this most commendable undertaking of theirs until I recently made somewhat of an examination. A gentleman told me in the office today that in the examination of the children in the infirmaries—take for instance the Lancaster Home in this state, which is a model one—that he found in the examination of the pupils there some 83 to 85% had defective teeth that indirectly affected their eyes and so on, their general health affected and undermined: and in our public schools, the pride of our country, there has been an awful neglect of this manifest duty of the citizens in providing proper methods of examination and understanding of the difficulties with which, I think, about 95% of the pupils are suffering.

I am here merely to open this meeting in order that you may be entertained and profited by the speakers and by these gentlemen who are engaged in this most patriotic duty. We think that in regulating the rules of the House of Congress or building the Panama Canal or building high grade bridges or dredging the Cuyahoga River we are engaged in a great work. We are—the public sees that: but that, which is of greater consequence than the laws, is this conservation project of the natural resources which are our people, and in that they are engaged in something which commands respect and attention and help in carrying forward what they have so nobly and unselfishly undertaken.

There is so much in this world that is away above and beyond the mere matter of our own personal welfare, and that of simply making money and looking after our own selfish interests. This is an unselfish band of men engaged in starting the young people right, and upon that depends the progress and prosperity of our country.

Some—I don't know how many—years ago we in America were criticised, and keenly felt the criticism, in our methods of life and living, our hygiene and the way we cared for our persons. We were described as " a sorely clothed, unhealthy race of Americans," by that great writer, Dickens. The people were sensitive to the criticism, but in the development of physical culture, in the care of our food products and in the better understanding of the care of our people we have become today, from the position which we held at that time in the matter of health, outdoor sports and that which related to health, so we have surpassed our Anglo-Saxon brother, the Englishman across the water, until today the American men and women are larger, bigger men and women physically, than the Englishman who was the type of manhood the world throughout. This is a fact which relates to America today and all due to a better understanding and care of our person.

Now, this project, this campaign, which has just been properly styled education, seems to have disclosed to the majority of the public for the first time the fact that one of the great sources of unhealthiness, which is the destroyer of manhood and womanhood, is that of the want of care of that which goes into our mouths. We don't care enough in America here as to what comes out of our mouths. That is a subject of discussion all the time, but what goes into them and our care of them is that which lies at the very foundation of our health, happiness and prosperity.

It is my pleasure first to introduce to you, who will bid you welcome to the city, which we all also cordially do, a man who is engaged in, next to the enterprise in which you are engaged, one of the most difficult problems in America, that is, the government of cities. That is considered somewhat of a problem, but I am satisfied he has an easy job compared with what you are doing. I don't think he has had any support yet but when he gets in further, then as he continues to have, as he now has, the approbation and encouragement of the people of Cleveland, they are going to feel even in larger degree a mayor in our chief with whom we shall emerge into a position of government which shall justly be known as the best governed city in the country. I have the pleasure of introducing to you the Honorable Herman C. Baehr, our Mayor. (Prolonged applause).

ADDRESS OF WELCOME.

By Hon. Herman C. Baehr, Cleveland, Ohio.

Mayor of the City of Cleveland.

Mr. Chairman, Ladies and Gentlemen: To the visitors to this Convention I want to say that I deem it a great pleasure to welcome you to our city. Let me say that the latch-string is out—the water is fine; come in and make yourselves at home! I am quite sure that the citizens of Cleveland will make it pleasant for you while you are here. The city is yours—all we ask of you when you leave us, leave our city with us for we love our Cleveland!

Some few weeks ago I was told of this movement. I became deeply interested in it, and am going to follow it carefully. I not only want to hear but also want to see. I consider this work one of great importance. You are laboring in a most fertile field; you are trying to do something for your fellow men, and after all man's greatest mission on earth is to do something for his fellow men. When he has done that, he has done his best.

Today, I understand, you dedicated five clinics in various schools in the city, and you are going to take care of the little tot. Can you conceive of anything more barbarous than to send a child to school sick with the toothache and ask that little one to try and learn his studies?

This movement means better citizenship, because the care of their teeth means happiness and health! I want to say to you that I believe you have demonstrated your work to the people of this city, and to you that come here, you people of your homes, I want to say, as Mayor of the City of Cleveland, that I shall endeavor to help you take in a greater field. I believe the indigent poor should be treated. We take care of them now if they are sick in hospitals, and the sickness of the teeth is one that also should receive equal attention. I pledge you now after having seen this work that I will march forward with you, gentlemen, and try to get an annual appropriation whereby this work can be enlarged so that the poor, who are unable to have proper treatment for their teeth, may be provided for by the city.

May the seed that you have planted today take root. May those roots be planted in every quarter of our country. It means better citizenship. It means more happiness to our people.

I wish you the best of success.

I thank you. (Applause.)

MUSIC.

The Gypsies...*Roeckel*

Central and Lincoln High Girls Glee Club (60 voices).

THE CHAIRMAN. The next speaker, Dr. Burton Lee Thorpe, is the President of The National Dental Association, and I have the pleasure of presenting him now.

RESPONSE.

BY BURTON LEE THORPE, M. D., D. D. S., ST. LOUIS, MO.

President of The National Dental Association.

wants ten cents' worth of oleomargarine and please stamp a cow on it—we

Mr. Chairman, Ladies and Gentlemen:—I recently heard of a little girl who went to the corner grocery and said to the grocery man, "Mamma are going to have company for supper." And on this occasion I rise to put my stamp of approval and speak a word of praise and commendation for the wonderful work done by these committees representing The National Dental Association, The Ohio State Dental Society and The Cleveland Dental Society, in opening this educational campaign and spreading the gospel of Oral Hygiene, which means to the public one of the greatest benefactions ever inaugurated on God's great globe! It is a pleasure to know that these men have done their work so well and that this movement has been inaugurated in this city and in this great state that has done so much for dental surgery and its development. I doubt if many of the laity in this audience know that in Ohio was established the second dental college ever organized in the history of the world and the first dental journal published west of the Ohio River. It gave to the profession such pioneers as James Taylor, George Watt, Jonathan Taft, W. H. Atkinson, R. H. Varney and many others, and last but not least the great dental scientist, the lately lamented W. D. Miller. We are indebted to these men who have performed this pioneer work which is bound to be a success, and its influence widespread for the simple reason that it has the two most potent factors in Christendom endorsing it, namely the American mother and the American school teacher.

I doubt if these men realize what they have done and the results that are to be reaped from it, and I also doubt if the public appreciates to the full extent what this work means to them in the future. These men will reap their reward later, and on the pages of dental as well as on the pages of philanthropic history they will be accredited as rendering important service to public health.

I thank God tonight that the time has arrived when the dentist is no longer held up as a scarecrow by exacting mothers to frighten their unruly children, but instead he is a useful and necessary adjunct to the community in which he practices his calling. I also am thankful that the bath tub and the tooth brush are two of the greatest civilizers we have. It used to be considered an evidence of culture if a person carried a tooth brush in his vest pocket, but it was no more an evidence of culture than a wig is of hair or prudery is of virtue.

I take great pleasure in expressing my personal thanks as President of The National Dental Association, and in the Association's behalf thank Mayor Baehr, the Committee on Oral Hygiene of the Association, also the Committee representing The Ohio State Dental Society and the Cleveland Dental Society. I also desire to thank the Cleveland Board of Education and the school teachers, who have lent their support in many ways in making possible the opening of this campaign and these clinics. All these we thank for assisting in impressing upon the school children of this city and eventually in impressing upon the school children of the world an adage, which is a good one for all of us to practice "Keep the mouth pure, the gateway of Health."

MUSIC.

Mother Goose Medley................................Sherwood
Central and Lincoln High Girls Glee Club.

THE CHAIRMAN. I was reminded as Dr. Thorpe talked of that Missouri congressman—well, now, I don't know whether this one was from Missouri or not—that went to Washington at the time of the inauguration. He hadn't been there before and thought he would just look around and "get the lay of the barn" before he went down. He wrote friends, "When I went there the Committee met me and we had some dinner, then we took an automobile ride, then had supper and went to the theatre, and then after the theatre we had some more to eat—I have had my knife in my mouth ever since I have been here, pretty nearly." (Laughter.)

The next speaker is one of our own Cleveland men. I find he is chairman of almost everything and then some—more! And I have discovered that he is a real "live wire," and that he is responsible very largely for this great national movement. I think we ought to get him into politics—he seems very efficient in every direction. The Doctor has been suffering from a very severe illness, but he appeared on both feet in a very strong way this afternoon! I have the pleasure of presenting to you Dr. Ebersole. (Applause.)

IMPORTANCE OF ORAL HYGIENE.

BY W. G. EBERSOLE, M. D., D. D. S., CLEVELAND, OHIO.

Chairman Oral Hygiene Committee of the National Dental Association.

We are told that in the beginning God created man in his own image, therefore, perfect, after which he rested. Some wag has said that after the Lord rested he made woman and since then neither God, man, nor the devil has rested. Personally, I disagree with this wag's statement. I have not found it to be true.

A few years ago micro-organic life was discovered. It was a great discovery and a valuable one; but, do you know that following that discovery the medical and dental profession have been so busy chasing microbes and parasites that Humanity has not been given a moment's rest since that time.

So persistent have these professions been in their bug hunting, and so great the hue and cry created in the chase, that mankind, as a whole, is kept busy not only in jumping sideways, but jumping up and down as well, trying to avoid coming into contact with disease producing germs.

If you do not believe this statement, just go down town and stand on a busy corner and cry "Microbes!" "Look out for the Microbes!" and watch the people jump.

If you want to see them scatter, only say, "Look out for the pneumonia germ or the typhoid germ;" but, to bring it down to this audience, suppose that I was to say to you that the large meeting held in this hall this afternoon was composed wholly of tubercular patients in all the various stages of the disease. One half of this audience would leave at once, and if I was to follow this declaration with the statement that, unfortunately, this morning Dr. Blank, a prominent bacteriologist, had dropped a tube containing a very virulent culture of the pneumococcus (the pneumonia producing germ) and that these dread germs were now floating in the air throughout this room, the other half of the audience would beat double quick time for the exits. Why, I believe I would leave, myself, under these circumstances, and I have always thought myself immune.

Methinks I hear some one ask, "Do you not intend to cry microbes or bacteria?" Yes, I must confess that I do, but my cry will be in an entirely different direction from that uttered by most men in discussing the subject since micro- organic life was discovered. Most of the thought and attention has been directed to destroying these organisms after their birth; but my cry is to be for the destruction of their breeding places.

But, says some one, "Is not man the principal breeding place for pathogenic bacteria, and would you not have to destroy man in order to destroy these breeding places?"

To the first part of that question I will answer "yes, man is the principal breeding place for pathogenic bacteria;" but, to the last half I must answer "no," for it is not necessary to destroy man in order to destroy the breeding ground.

In the perfect man, in man as God created him, in man who lives and cares for his body as God intended he should, there is no breeding place for pathogenic or disease-producing germs. It is only when man falls from his high pinnacle of perfection, it is only when man neglects to properly use and care for his physical being that his body becomes susceptible to the activity of disease-producing germs.

But, we are told that we cannot expect to produce perfect man. No, we do not expect it; but, we can so nearly approach perfection in mankind that diseases from micro-organic life will have little or no influence.

We expected to have on this platform tonight, a man who has done more to show the world what can be done in the way of approaching perfection, from a physical standpoint, than any other man living. I refer to Mr. Horace Fletcher.

A man, who, at forty, was practically a physical wreck, with no seeming chance for ever gaining perfect health and who has so far developed his physical being at the age of sixty that he is not only able to stand the severe tests of strength, but to practically double the records of the best athletes in the leading colleges of the country.

And, what has been the principal secret of this development? It has been the proper use and care of the oral cavity—the first three inches of the alimentary canal—as he puts it—the mouth, the most important organ in our physical being.

The mouth, the least considered, the most neglected and ill-kept organ of the body. The mouth, that organ which can make such a change in the human being as that attained by Mr. Fletcher, the care and use of which no man has developed more fully than he.

Former President Theodore Roosevelt stated that "the health of our citizens is the greatest asset of the Nation," and in recognition of this fact, President Taft has called for the formation of a National Health Bureau.

We have said that the discovery of micro-organic life and the turning of the attention of professional men in this direction has been of great value. As proof of this, we will say that the death rate by typhoid fever, a communicable disease, the conquering of which is largely a question of sanitation, has been reduced 50% in the United States since 1880, and still 22,000 die annually from this malady.

The diphtheria rate has been reduced 80%, but still there are 20,000 lives lost annually from this malady.

Most of this reduction has resulted from the knowledge obtained in the study of bacteriology and sanitation, with little or no thought directed toward the oral cavity, the greatest harbinger of pathogenic micro-organic life and the portal through which most of these germs enter the human system.

But, notwithstanding these statistics, we are told that every hour seventy-two Americans die from preventable diseases. Each day lives are needlessly destroyed which equal a population of a town of almost 2,000. Every year the sacrifice of life, through ignorance and neglect, equals the population of a city larger than Baltimore or St. Louis.

My authority for this statement is Professor Irving Fisher, of Yale University, and is taken from his recent report to the National Conservation Commission of which he is a member.

Just think of a great city, larger than Cleveland, being wiped out in a single year by diseases which may and can be prevented, and it is to help prevent such a condition as this that we have asked you to meet with us to discuss the care and use of that organ which will wield the greatest influence in correcting these faulty conditions.

The profession, of which I have the honor to be a member, has proven that the neglected oral cavity, the ill-kept mouth, is one of the best breeding places for pathogenic micro-organic life or disease producing germs, and the Association, which it is my privilege to represent upon this occasion, with the co-operation of the Cleveland Dental Society, has obtained proof that 97% of the children in our Public Schools have diseased or faulty mouths.

If 97% of our little ones have mouths that are diseased, what must be the condition of the adult population of this country!

Just think of our boys and girls, our babies, our loved ones—no matter how much care and attention we have given them at home, being placed in an institution where it has been shown beyond any question that practically 97% of the inmates are abnormal or diseased.

What a "Hue and Cry" would be raised if parents were to deliberately send their children into a house containing patients ill with scarlet fever, or a building filled with patients affected with measles; or, imagine, if you will, parents sending their little ones to live for a certain number of hours each day in an institution containing patients who were ill with pneumonia, typhoid fever or tuberculosis.

What a furore would be made and how active the Health Authorities would become under these circumstances, and yet, think of the State and Nation requiring these same parents to send their children for five hours a day to be confined in an institution wherein 97% of the inmates are found to be diseased and the mouths containing the micro-organisms which produce pneumonia, and the micro-organisms which produce tuberculosis, together with innumerable other pathogenic organisms.

Thus far I have spoken of the mouth as a whole. Just a word about the influence of the teeth upon disease. Dr. Henry Upson, of this city, has proven that many cases of insanity are due to the faulty conditions of the teeth. It required considerable experimenting and much time to be able to obtain definite proof of this fact, and yet, every up-to-date dentist knew this and has known it for years.

Why, every woman in this audience who has had her husband come home with a toothache has realized the truth of this statement. If you want to see a first-class case of insanity, take a strong man, suffering with a violent toothache, the stronger the man and the more active the ache the more interesting the case.

We may laugh and jest if we will. Physicians and dentists have questioned many of Dr. Upson's statements, and while I do not endorse all of them, I want to say to you that Dr. Upson states facts when he says that the faulty condition of the teeth *may* produce insanity.

I want to go a step farther and state that faulty teeth exert an equally detrimental influence on every other organ of the body. Thousands of so-called cases of Stomach, Intestinal, Liver, Kidney and Heart troubles are due to the faulty use and care of the mouth and teeth; and all the medicine and *medical treatment in Christendom can not cure them.*

They must use and care for their mouths and teeth properly if they expect to recover their good health.

Why, do you know that the great Match Manufacturing Trust has employed a dentist for years, whose duty it is to visit the factories so many times a year and examine the employees? If faulty conditions of the mouth or teeth are found the employee is instructed to have this condition corrected, and if it is not done within a reasonable time the individual is dismissed from the service.

Before this system was established, many people not only lost their teeth, but in a number of cases workmen lost their jaws as well, and even death ensued *from poison which passed in through decayed teeth.*

Since the establishment of this system of examination and compulsory care and treatment, *phosphorus necrosis* or death of the bone has been practically unknown to match workers.

A fact which I wish to particularly impress upon this audience is that *caries, or, decay of the teeth, is the most prevalent disease of civilization.*

Every Father and Mother knows how readily the germs of scarlet fever or diphtheria are communicated from child to child, and I want to say to this intelligent audience *that the micro-organisms which produce decay of the teeth are just as readily transferrable from child to child and from adult to adult, as other germs and are wielding greater havoc in the human family than all the other disease germs put together;* and it is for the purpose of proving this very fact to the public at large that we are inaugurating this great educational campaign.

There are thousands of invalids who are such because of faulty oral conditions.

Some one may ask the question "If these things exist why have we not known it before?"

My only answer to a query of that kind is that it is because both the medical and dental professions have failed to perform their full duty toward mankind.

Some of the more progressive members of the Dental Profession have made numerous attempts to have the various State Legislatures pass laws granting the Boards of Education, throughout the country, the power to permit or establish examinations and lectures from an Oral Hygiene standpoint and to install clinics to take care of the indigent poor.

The facts which have been presented to you tonight have been furnished our law-makers; but, almost without a single exception a deaf ear has been turned to this plea.

The excuse has been that other matters of far greater importance demanded the attention of the various Legislatures. *Just think of such* *a condition!* The Members of our Legislatures too *busy* to look after the health and comfort of our boys and girls: and think, too, they control the laws which compel our children to attend these schools wherein are found such unhealthy conditions.

The great trouble has been that there was no definite proof of these statements at the command of the profession, and while these facts are known, and have been known for years, to the profession, they lacked convincing proof and the law-makers have not been inclined to accept their statements.

In other words, it is an absolute impossibility to secure laws to handle and control the conditions which confront us *without first educating the public to their needs,* and through them reach the *"Powers That Be."*

The Public and the Law-makers of this country must be made to realize conditions as they exist.

They must see that with which we have to contend; and it is for this purpose that the present Educational Campaign has been undertaken.

This meeting tonight and other meetings of a similar nature which will be held throughout the United States, are cries for help on the part of the profession in seeking to prevent this great disease of the people from destroying the health, vigor and happiness of the human family.

Without the aid of the public at large in combating this common foe, preventable diseases will continue to sap the life and strength of our Nation.

Our cry for help is not alone to care for conditions which actually exist; but, *the great appeal in which we raise our voices at the present time is for aid in the prevention of this condition.*

Methinks I hear some one ask "Why it is that this condition exists?" My friend, it is a long story, and one upon which I might talk by the hour. Briefly stated, it is our method of living, the kind of food we eat. I beg pardon, did I say eat? *I should have said "bolt," for the American people are a race of food bolters. We do not eat, we have lost the art. We simply shovel the food into our stomachs* as a fireman shovels coal into the furnace, and give it about as much thought and attention while it passes through the mouth.

Thus far, I have spoken of the care and use of the mouth. I should say the use and care.

The great mission before us today is to teach the correct USE of the mouth. With Humanity using the mouth as God intended it should be used, care and treatment would sink into comparative insignificance and many of the ills and ails of the public will be practically forgotten.

Today we have almost forgotten the importance the mouth bears to life, and as a result we are reaping the reward in the loss of health, strength and beauty.

The fact is that the condition exists and is gradually growing worse in spite of all that has been done by both the dental and the medical professions.

The question before us tonight it not so much what causes it as how to prevent it.

True, we are interested in the cause in so far as it aids us in preventing this condition.

It is to combat this condition that we are waging our war.

Our campaign embraces the three great Educational mediums of the American Republic; the public school, the public press, and the public platform.

In the public schools we are installing a system of examination, which brings the attention of every parent to the faulty condition of their children's mouths.

This work is being done in the City of Cleveland by members of The Cleveland Dental Society. Lectures are to be given in the school buildings by a corps of twenty men of the Cleveland Dental Society, explaining to parents, teachers and pupils how to overcome the faulty conditions and to prevent recurrence.

Six clinics have been established, four in connection with the public schools and two in connection with the parochial schools, to be used in educating the public at large as to the value of proper oral conditions.

Arrangements have been made with the Educational Department of the Public Schools for a complete record of the child's working efficiency, both before and after treatment.

The newspapers of the country have been brought into the fold and made aware of the appalling conditions and have united their forces with the profession to secure the correction of same.

Such meetings as we are holding tonight will be held all over the country in order that the message may be brought to humanity as a whole.

Every father, mother and teacher must unite with these great forces to secure conditions which will prove a protection to our boys and girls, and not a menace.

Nothing can possibly be of more value to a Nation than the lives of those who compose it. To use every possible means to prevent destruction of these lives is not only a proper function of the Government, but a most solemn duty of Government.

But, in the great rush to aid or control great corporations, the Government has almost forgotten its duty to the masses, and it is up to the people to teach it that there is something of greater importance than dollars and their control. Government must be made to perform its full duty.

Our law-makers have recognized this duty only to a limited extent. They have provided Health Boards or Bureaus—local and national—to assist in protecting human life against one class of preventable diseases, and that is those that may be communicated; but, as already indicated, the deaths that have been prevented are but a fraction of the enormous number occurring annually from some of these same communicable diseases.

We are told that public health measures and the general war against disease are supposed to be more effectively and actively prosecuted in Greater New York than in any other American city.

The cost of governing that city last year was $148,447,000.00 and all that was spent in the health department was 1 1-16% of that amount; and yet during that year the city lost 33,200 lives from ordinary preventable diseases.

We are also told that in 148 cities of the United States, during the year of 1907, the ratio of health department expense to the total Government expense was 1 8-10%. The ratio expended for police and fire departments of these same cities was 23%. From this may be obtained an idea of the slight importance placed upon the conservation of human life by the government of our large cities.

In Greater New York $8,000,000.00 were spent on the fire department, and the fire loss was $9,400,000.00. For the public health department $2,418,489.00 were spent, while the value of life lost from preventable diseases, using Professor Fisher's estimate of $1,700.00 as the producing value, was $56,550,000.00.

Just think of spending eight millions of dollars to protect property against fire, and only spending two and one-half million dollars to protect the lives of human beings when the loss from preventable diseases alone has been estimated at fifty-six and one-half million dollars. Is it not high time that such men as former President Roosevelt, President Taft, and others call our attention to the necessity of greater activity in this direction?

No department should show greater activity and energy than the health department, which should be organized on scientific lines, presided over by broad-minded scientific men, and provided with a publicity bureau, and a large and efficient corps of medical and dental examiners and inspectors; and their work should be conducted on a scale consistent with the amount of life waste they are to combat.

But, life waste in the United States amounts to a billion and a half annually in dollars alone; the estimated producing value of the lives unnecessarily destroyed.

Figuring a population of 80,000,000 inhabitants this means a loss annually of $18.75 for every man, woman and child in the land. Almost two-thirds as much as it costs per year to educate a child in our public schools.

This is a tremendous loss and must be stopped; but this is only the loss which occurs through death. We have said nothing about the loss in *working efficiency* from those who are attacked by the *various preventable diseases* and *recover from the same.*

If to the loss by actual death, we add the loss in producing power of those who recover from the various preventable diseases, we would more than treble this amount, making the actual loss in the United States practically five billion of dollars, from diseases which might be prevented.

This is an astounding statement, and a condition which should merit the closest attention on the part of every inhabitant of this great and glorious country of ours.

A stop must be put to this tremendous waste, but how? The men at the head of this great campaign believe that the correct use (mark you, I said the "correct" use) and care of the mouth will wield the greatest influence for good in this direction.

In the campaign we are launching, we are asking you to join us with a view to materially increasing the vigor and working efficiency of the pupils in our public schools; to help sustain the health and happiness of the American home; and to restore the strength, comfort and beauty of the Nation.

We must stop the mad rush for dollars by the American people long enough to turn attention to the preservation of the life and health of the Nation.

We have in this country the greatest Educational Institution of the world. I refer to the Public School System. In the past the greater portion of the effort of this organization has been devoted to the training and development of the mind and so persistent have been our efforts in this direction that we have a race strong in mind, but weak in body.

The final appeal I wish to make to this audience and to the public at large, is for aid in making this great educational institution one which gives as much thought and consideration to the physical being as it gives to the mental; and, thus bring back to our Maker man as he was given to us.

Let us use every force within our power that will aid in making our Public Schools an institution which will produce men both strong in *body* and *mind;* and let us stand shoulder to shoulder fighting for the life and health of mankind until we have health protection in this *land* of ours, which equals at least that given to property.

Let us have a National Health Bureau, organized and governed in a manner which will tend to give back to nature, man as God created him.

Let us do these things in the interest of our schools, our homes, and our Nation; and to the glory of God and of mankind.

It is God's will, can we not do it in His Name?

MUSIC.

The Snow..Elgar

Central and Lincoln High Girls Glee Club.

THE CHAIRMAN. "The Relation of Conditions of the Oral Cavity to the Health and Morals of School Children." We have heard a great deal from the oral cavity of the appellant of Chicago in one instance, and a good deal of trouble has come from that source in recent times, but I expect it is not of that Dr. Evans is to speak this evening. I might say, before introducing Dr. Evans, he is the Health Commissioner of Chicago and stands first in the country in his profession and in the position which he holds. I have the pleasure of introducing to you Dr. Evans. (Applause.)

THE RELATION OF CONDITIONS OF THE ORAL CAVITY TO THE HEALTH AND MORALS OF SCHOOL CHILDREN.

BY W. A. EVANS, M. D., CHICAGO, ILL.

Commissioner of Health.

Ladies and Gentlemen: It has been a source of a great deal of pleasure to me that I have been enabled to be in Cleveland today and to participate in the beginning of a movement that I believe will be of enormous importance. In certain particulars it represents the "borning" of new ideas, the inception of new methods and practices. I feel not entirely different from the condition of a student, a child that was just entering school. He came to the teacher and the teacher inquired his name and his address, who his father was and who his mother was, and said, "Well, Johnny, have you ever been vaccinated?" "Yes'm." "Did you ever have the doctor?" "Yes'm." "And how long ago?" "About seven years ago," said Johnny. "And what was the matter?" "Well I was getting born!" (Laughter.)

During my college days I occasionally sang a song which ran about as follows:

"We are here because,
We are here because,
We are here because we are,
Because we are here."

That was the sole reason why they were there, and they did not get anybody's or did not get the concensus of opinion upon the part of those who heard them that they should have been there! Now I am here tonight, I believe, for something more of a reason than this. I think I am here for two reasons, and I am going to tell you something of those two reasons as I understand them.

I understand I am not here by reason of my personality, but that I am here in part by reason of the fact that I come from a great city which something more than a year ago, probably two years ago, discovered how it was losing by not having school inspection and how having seen this and understanding this, proposed that a remedy for the condition should be found and, as a result, instituted school inspection. I have with me tonight some of the results of that school inspection, and I am going to read some of the results of 1909 especially those that concern the people who are interested in the dental side of this institution.

We have one hundred school inspectors, each in charge of a certain part of the city and looking after not only the physical examination of the school children but of school children for contagious and communicable diseases and not only looking for contagious and communicable diseases in school children but looking after contagious and communicable diseases in the section of the city over which they have charge. In addition—these are supplemented, we might say, by the services of 40 school nurses, whose functions are several, perhaps the most important of their duties being to see that the instructions given, that the discoveries made by the school inspector, shall be acted upon by those who are the legal authorities in control of the children needing help. As to this particular phase of the subject I shall have more to say presently.

These 100 school inspectors in 1909 examined 647,842 children. The number of school visits made was 59,158. The number of physical examinations made was 123,899. The remainder of the nearly half million school children of the City of Chicago did not have a physical examination made by the School Board during the year 1909.

Of these 123,899 children examined 63,199 were found to have physical defects. I trust you will understand that where 100 men are responsible for the physical conditions of half a million people it is not possible that there should be an ultimate examination, that the best we can expect is that the examination for contagion should be careful enough to prevent a large spreading of contagion and that the physical examination should be deep enough to discover the major defects that exist in the children. It, of course, cannot be denied that the percentage of children that are in some measure defective is infinitely greater, and these 63,199 children do not represent the sum total of defective children in this group. It represents the sum total of children with relatively great defects, with defects of relatively great importance.

And now a few of the elements in the analysis of these figures and especially of the conditions that would interest you particularly. Far and away the most frequent defect found was defective teeth, 44,483 children being found with teeth that were radically wrong. In addition to the fact that children with defective teeth were most numerous, there were thousands of others with defects which were closely related to defects of the teeth, and to some of these I shall call your attention and presently I shall show you the relation between defects of teeth and the things concerning which I shall now speak—enlarged glands 16,945; defects of hearing 2,830; nasal breathing 6,524; herpetic tonsilitis 27,556; adenoids 4,088.

The nurses did a work that is of just as great consequence as that of the doctors, and yet as it does not particularly concern the subject in hand I will not specifically refer to it.

Now, Ladies and Gentlemen, teeth defects were, as I have just said, the major defects found. I am sure that in the light of what you have just heard from Dr. Ebersole you are convinced that a majority of the bad teeth in Chicago children were not found, and that there is great necessity for a more accurate examination of the children's teeth than was made. But let me tell you how this thing presents itself to my mind. Our machinery for the discovery of defects is infinitely greater than our machinery for getting those defects rectified. We have discovered defective teeth in the mouths of tens of thousands of children in that city, but we have no adequate means of having these tooth defects rectified, and until there is better machinery for the relief of these conditions there is no necessity for better machinery in the discovery of those conditions. And that is, from your standpoint at least, the more important part of the story that I have to tell. That constitutes one of the reasons why I am here tonight.

About three years ago we came to the conclusion in the Department of Health of the city of Chicago that there is not a great difference between the law of public opinion, the law of the statute book and the law of judicial decision, that these ran relatively close together. About two years ago we passed a bakery ordinance in our city, and one of the provisions of that ordinance was that bakeries should not be maintained in basements. After that law had been on our statute books about two years we succeeded in getting three hundred bakeries out of basements; then the court reviewed that law and pronounced it bad law, and it stood repealed. We were without a bakery ordinance for six months and during the period that elapsed between the court decision on that law and the enactment of a new law how many, do you suppose, of those bakeries that had been forced out of basements in spite of violent protest saw fit to go back into the basements from which they had been moved? You will understand that they had not been out of there long enough to build up a new environment, and in consequence it was just about as desirable that they should go back into the basement as it was that they should have remained there while they were there. In that interval of six months, during which they were privileged by the law of the land to move back into the basements which they had vacated, but three went back and during that six months seventeen basement bakeries voluntarily moved out of their basements.

To my mind, Ladies and Gentlemen, nothing is more significant than this, that whether there was a law on the statute book or not it did not directly affect the situation, because of the fact that in that community there was a law of public opinion—and the law of public opinion is just as compelling as is the law of government! (Applause.)

And so we recognized about three years ago if the things were to be done for the people, that it was obviously desirable should be done for them, it was necessary there should be consent of the people.

I am not one of those who blame their law makers for defects in law, because I believe that law makers are responsive to public sentiment as they understand it, and the man who complains of law has no one to complain of save himself. The responsibility for bad law rests not with the law maker or with the law administrator or with the judge who dispenses law; it rests with popular opinion, and the responsibility therefor goes back to the shoulders of those who are charged with the responsibility of leading, teaching and directing their fellow men; and he, who stands on the platform and accuses the law maker, in greater measure and in greater justice accuses himself.

Our recognition of the fact that the source of power was the people was responsible for a campaign of education, and now in the City of Chicago, every day, health lectures are given to the people in some part of the town upon one thing or another, compelling through one group of influences or through another sound recognition of the fact that there can be no good law and no good administration of law or no good judicial decision save in public opinion.

We are accustomed to believe that the last word of law is that which is given by the court. My word for it, Ladies and Gentlemen, courts are not bound by precedent, courts are not bound by the law of antecedents, so much as they are bound on all great and important questions of public policy by public opinion on those questions; and therefore there is no variation in this arm of government from the other arms of government. And this is the second reason, I believe, why I, as a representative of the Health Department, as a representative of a part of the city government of Chicago, have been asked to speak here tonight.

And now what is the importance of teeth to the community? I will speak briefly to three aspects of the question. The first of these is the importance of nutrition to the individual. Perhaps some of you have heard of the negro who was teaching his mule to get along without eating. He succeeded, but just as he had the mule taught so that he could get along without eating the mule died. There is a moral in this. We start out with the infant, and our constant experiences through life are experiences which, viewed to the ultimate, mean and teach of the decreasing importance of food, and therefore much the most important part of the life of an individual is infant life. Why, what is a baby? A baby is practically nothing but a stomach with a material amount of skin and other tissue around it; and see the skin proposition which confronts a baby who begins life weighing ten pounds and is required within a year to increase his weight one hundred per cent. Now let us apply it to an adult. Here is a man who weighs 200 pounds. He has been informed that by March, 1911, he must weigh 400 pounds. He cannot have time to do anything but eat, and it will be hard to do it at that. All his energy and all his thought and all his resources will be concentrated upon one thing —taking in food and converting it into tissue. That is just what a baby is confronted with, and thus it is, that within the first two years of life, the eating side of a baby's life, the intaking of food and the building of that food into energy and physical force and into the beginnings of mental force, are the great kinds of work that that baby finds to do, and during the years of school life this is still on the increase, still of great importance though of decreasing importance. The food of a child—the proper mastication of that food, the proper character of that food, the proper assimilation of that food—is of greater importance than it is at any subsequent period of the individual's life. A child comes into school weighing 50 pounds and, let us say, 4 ft. in height. It comes in of an indifferent manly type, and it goes out of that school a man 6 ft. in height, weighing 160 pounds, a man in intellect, in scope, in physical and in mental characteristics; and that is the work, that is the change that must be effected in the child during the term of its school years. And so under these circumstances of what overshadowing importance is nutrition in the child during school years. This is, of course, one of and perhaps the most important reason why the thing that must be done well, if the child is to do well, should be done well by means of those instruments that must be perfect if it is to be done well—the teeth.

Another side of the question, which should not be overlooked, is this. We have, for a long time, appreciated the importance of certain orifices of the body in relation to infections. It has been easy to see this relation with regard to certain acute infections; it is more difficult to see it with regard to infections that are more chronic in character. We are coming to understand that the eruption of scarlet fever is secondary, that the important part of scarlet fever is a focus of infection located either in the nose, in the mouth or in the naso-pharynx, and that from this spectrum of absorption the poisons are circulating through the body; thus the poisons are but giving expression to themselves in the eruption that has been held heretofore to be of such consequence.

The importance of diphtheria I am sure is fully understood, but the group of things not nearly so clearly understood is the enlargement of the glands of the neck, the enlargement of the glands of the nose, of the tonsils, of the pharynx, which are due to absorption somewhere in the nose or within the mouth, and a very large percentage of those absorptions take place through cavities in the teeth or down the sides of unclean teeth. Not only that, but we are constantly confronted with this instance. A child has been in a diphtheria hospital and has remained there until seemingly it was safe for the child to go home; then the child goes home, and after it has gone home there has followed an infection with diphtheria in its wake in that home. What is the explanation, what is the logical explanation? The logical explanation is that in some hidden recess, somewhere in that child, there was a focus of hidden bacteria, and in all human probability, a large percentage, if not an overshadowing percentage, of those infections are either in the tooth cavities or in something in close connection with the tooth cavities.

The importance of these things possibly you do not understand. I heard Judge Mack say not long ago that from his several years' experience on the Juvenile Court bench in the City of Chicago he had come to understand that there was a close and necessary relation between the child with enlarged glands, the mouth breathing child, and the criminal, and this is of consequence, I am sure you understand, not only that there is the child pale, weak and wan, working unsatisfactorily to himself and unsatisfactorily to his employer, rendering improper returns for its immediate effort, but building up disaster not only for that community of men, not only for the family connected with that child, but in some measure for the entire community.

Then there is another phase of the question, and that is this—to properly care for the child's teeth represents a proper regard for aesthetic considerations. Let me say to you this cannot be neglected, and it cannot be neglected in any stratum of society. You mothers cannot afford to have your children understand that in any particular they are not on a par with their fellows. You cannot afford to have your children grow up with mouths that are awry, with jaws undeveloped, constantly confronted with the fact that there is something wrong in their facial structure, in their personal appearance; and there is something that is to be gained from the pride of a parent, from the pride of opinion and from personal pride of any sort or character. There are occasions under which pride of opinion or pride of personality works harm, but take it in the large and weigh the harm it does and the good it does and every community will be found better for having every single man of that community a self-respecting man.

And now what is the value of health to a community? Dr. Ebersole told you a while ago of the enormous losses in this country from fire. There is no country in the world where the fire loss is so great as it is in the United States. There is no country in the world where the expense of maintenance of fire protection is so great as it is in the United States. There is no country in the world where the police loss, or loss by crime, is so great as it is in the United States, and there is no country in the world where the police expenditure is so great as it is here. But these statements do not hold true of health work. There is no country in the world where the death rate is so low as it is in the United States. There is no country in the world where the expenditure for preservation of health is so small as it is in the United States. These are not things that have come about automatically; there are many factors that have worked to bring them about. In the first place our people are intelligent, our people are prosperous and our people are self-respecting. Our standards of living are high. Our standards of cleanliness are high. Our standards of right are high. And all of these things make for a low death rate. Our standard of intelligence is high. Our standard of personal control is high.

And these make for a low death rate. But probably the factor that has made for a low death rate more than any other, is the fact that we are a picked people. Here are found the men and the women that are the cream of all lands of all the earth! The farm boy of Indiana and Ohio has been drawn from the farm to the cities, and in consequence the standard of health in our great centers of civilization, our cities, has been maintained. We have drawn the best of Italy, the best of Poland, the best of Germany, the best of Ireland, the best of every continental, European country. But not only that—our expanse has been great. It has been possible for every man to separate himself from every other man by great expanse of sunlight and air, and the things that man has neglected to do for himself God, in His goodness, has done for him. But now our country is becoming filled and no longer is it possible for us to prevent congestion of population, and what we are to have in the future will be that which we earn for ourselves by reason of right living. Our idle drifting, the drifting that has marked government in the years that are gone, must be supplanted in the years to come by community planning, by governmental planning, by civilization planning and by planning of the individual for posterity; and it will result that we will have so much of health, so much of peace and security, of prosperity, of opportunity, as we earn by right living, and no less and no more! I believe in a God, but I believe in a God of justice. I believe in a God that gives a man that which he deserves, and the way to have health is by so living as that you shall earn or deserve health!

We are confronted in this country by possibilities that are great, and if we properly take advantage of those possibilities it will mean a continuance of national prosperity, but if we do not properly avail ourselves of those opportunities in the large there is no automatic machinery which of itself, and in spite of us, will guarantee continued prosperity and continued opportunity to our land. If we are going to have it, we have got to earn it! There is no way we can have it without earning it.

We have in the City of Chicago six thousand deaths among babies every year. These are the babies of mothers of foreign birth chiefly, and yet these babies are just as dear to these mothers as are the babies of any other mothers to them. Those babies are sick for months, and after a period of pain and toil they pass away, and that is fearful to contemplate. And probably that is the very cheapest thing for the City of Chicago that could happen to those babies, as heartless as it may seem. An infinitely more expensive thing for our city would be for those babies of poor opportunity, those babies of dwarfed physique, those babies of poor physical development, to go on and become of school age, and then poor, weak, bent children to go into school with scrofula, with enlarged glands, mouth breathers, to come in competition with our children of the school room. What would be the result?

The boy, unable to maintain himself in the competition of the school room, would drop back, would play "hookey" just as innocently as you please. The next time he would play "hookey" there would be infused into him with that game of "hookey" a little of the perverted, a little bit more of the denied, and presently into that game of "hookey" there would be infused the element of outspoken crime. And so, little by little, day by day, and year by year, that child, innocent at first, would first go into mental incapacity and then into moral incapacity; and do you believe the community loses its relation to that child? No. The law of the statute book is the law that is placed there by public opinion, and that public opinion is being shaped largely by men and women of improper mental and physical attributes. There is not an ideal law in existence; every law is a compromise between that which we would have and that which we have to put up with; and so into the web and woof of every law, into the web and woof of every administrative act, there is woven the life distorted of this child which didn't have a fair physical chance, and that is part of the work, that is part of the cost of poorly developed children, that the community is paying. Do you think that the defective that goes into the poor-house has been shunted from your shoulders? Do you think that the man who died out yonder with consumption and has left a family of helpless children to be cared for by philanthropic societies, have been taken from the shoulders of society? Let me say to you that those, who are competent, are carrying every ounce of burden of those who are incompetent, whatever the character of that incompetence may be! (Applause.)

Our school inspectors had not been working long until a very bright young man by the name of Schram, who was attending the Graham School, went to the principal of that school and said, "Mr. Watt, I can pick out in your school the students who are bright, those who are dull and those who can't learn anything." "Well," said Watt, "let's see you do it." So Schram went down through the school room with Watt. He said, "This boy is a dummy, that one is bright, this one is in between." Watt said, "That's all right. How do you do it?" This is what Schram told Watt: "I noticed that that boy snuffled constantly; noticed from the shape of that fellow's mouth that he is a mouth breather, that he had adenoids; I noticed that fellow didn't have his teeth right, that one with enlarged glands, and I know that boys like that could not hold their own with the other boys in that room." After he had gone over a considerable number Watt said, "All right, you have made good. Now what are you going to do about it?" And then Schram told what, in his judgment, was the thing to do about it, and the result was that not only the defects of that school have been remedied but perhaps the most powerful apostle for right living in America has been developed in Principal Watt of the Graham School. Now why? It is not sufficient explanation that Schram had demonstrated that he, Schram, knew what he was talking about. There was something further necessary—they put those children under acute hygienic conditions, in a cooler room where the air was better. They got rid of the snuffing, they got rid of the bad physical conditions that were formerly present, and Watt has found—and I have his letter in my office-file to prove it—that by keeping that room cooler not only saved the coal bill 20%, but that the prize students in his school are those whose physical conditions have been thus cared for.

That which is true of the Graham School, of those under the care of Watt, is just as true in its essence of the people of the City of Cleveland who are working for the men and women who are here tonight. You cannot afford to have a bad physical specimen in your employ, you can no more expect to get a good day's work out of a poor physical machine than you can expect to get a good day's work out of any other part of the machine.

Now a relation that is especially significant to you, to this audience composed in great measure of members of the dental profession, is this. Here is the great work that civilization offers for the future. If the work is done, the results will be satisfactory. If the work is not done, then disaster will come. It is largely the work of men who are engaged in caring for the ills of the individual; the ills of society are but the aggregated ills of the individual. You members of the dental profession have received the heritage of the dentists who have done good work and gone before you. You are every day practicing principles that you did not create, that you did not discover. You are employing measures that you have received from others without return on your part for the things that you have received. Here is a great work that is essentially your work. It is your part of this community obligation to discharge this work! Not only is it an obligation which you owe to the community, it is an obligation of honor which rests upon the shoulders of every dentist who is the recipient of honors of dentists gone before, honors which have descended upon your shoulders. Therefore if you do it, you render not only honor to your community, render service not only to your community, but render honor and service to your profession.

THE CHAIRMAN. We all very much regret the absence of Governor Harmon. He is unable to be present here this evening, but he has sent his personal representative, a young man whom, a few years ago I had the pleasure and honor of making a member of the State Dental Board, Dr. Brown.

ATTITUDE OF THE STATE GOVERNMENT TOWARD PUBLIC HEALTH.

By H. C. Brown, D. D. S., Cor. Sec'y, N. D. A., Columbus, Ohio.
Personal Representative of Governor Judson Harmon

Mr. Chairman, ladies and gentlemen, I esteem it a special privilege to appear before you tonight as the personal representative of the Chief Executive of Ohio, and beg to express his regret at not being permitted to attend in person and participate in this program. The fact that so many important questions are before the legislature, at this time, prevents the Governor from accepting any invitations which will take him away from his office on legislative days. Do not misunderstand me in this particular, since he expects to visit your city tomorrow night, in fulfilling a promise made some weeks ago, but Saturday night engagements do not interfere with his legislative responsibilities.

It is my pleasure to extend to you the greetings of Governor Harmon, and to assure those who are responsible for this movement, and have worked so diligently to make it a success, that he is in hearty accord with this or any other movement which will educate the public, and especially the school children, in all matters directly related to the proper physical development of the individual, thereby advancing our citizenship to the highest possible standard.

Personally, I am pleased to assist in the inauguration of this Oral Hygiene campaign, and trust that the interest, so generously aroused here, will be a stimulus for other local and state societies, to the end that a similar movement will be started in all sections of our country.

In reviewing your program, we cannot fail to note the wide range, in position and influence, covered by those contributing to the success of this meeting, viz.: the pupils of your public schools, the teachers, the Superintendent of schools, the Board of Education, the Health Commissioner of Chicago, the Mayor, the Governor and the President, through personal representatives, the President of the National Dental Association, the members of the National, State and Local Committees having in charge this particular work, and a former Governor presiding at this general session; all of which is indicative of the personal sacrifice required of many in order to launch such a broad and effective undertaking.

It is indeed most fortunate that the chairmanship of both the State and National Committees, on Oral Hygiene, are at present located in Cleveland. It was my privilege to make the original appointment of the former, and at a more recent date, to recommend the latter for the important position he is so creditably filling; therefore, I am particularly gratified that their efforts together with that of the Committee and membership of the local society, have made it possible to inaugurate this Oral Hygiene campaign under such favorable auspices.

My position on this subject can be briefly stated by referring to a recommendation made to our State Society in 1907, when it was my privilege to serve as its President, as follows:

"I would, also, recommend that we should use our individual and united efforts to the end that Oral Hygiene may soon be recognized, and taught, as a requirement in our public schools; and further, that we should encourage members of our profession, with recognized qualifications, to appear before schools, teachers' associations and such other organizations, as will aid in disseminating information which will be of benefit in directing the public's attention to the proper personal, as well as professional, care of the oral cavity and its organs."

In a paper of later date, I said: "Two factors are largely responsible for the unhygienic conditions existing in the mouths of so many school children. First, ignorance on the part of the parents of the true existing conditions, as well as ignorance of the importance of observing hygienic precaution in this particular. Second, fear of pain in having many of these diseased conditions corrected.

"Both of these can very largely be eliminated by regular examination of the teeth of the school children. of from six to fifteen years of age, and the necessary treatment of the unhealthy conditions thus found, together with an outlined course of instruction in oral hygiene in the public schools.

"In my opinion, the item of expense plays little or no part, except only with indigent families, and provision should be made for these, as I am fully convinced that parents would make any reasonable sacrifice, if necessary, to correct such unhealthy conditions if they fully appreciated what such neglect meant to the child, and realized by so doing that they would save it from unnecessary future suffering.

"In the United States we have approximately 2,500 inhabitants for each dentist, while in Ohio and some of her neighboring states, this number is probably reduced to about 1,500. Therefore, each dentist in this section is supposed to look after the dental needs of 1,500; but this is far from the true situation, as I do not believe the average dentist will render service to 500 different individuals, annually. Deduct, liberally, say 500, for those who need but little, if any, service, such as the extreme in years and a limited few who may be considered immune, and we find that one-third of the number, as above allotted to each dentist, receive no service whatsoever.

"We will assume these figures are approximately correct, and if so, we are forced to the conclusion that a large per cent of the public receive no particular dental treatment, and this in the face of the fact that such neglect is recognized by those best qualified to judge, to be detrimental to the physical welfare of an individual."

There has been much agitation of late relative to conserving our natural resources, and it is not necessary to read between the lines to ascertain how deeply the public is interested when a question like this is once thoroughly understood. Little thought was given to this subject until recently, due largely to the fact that the true condition was not fully known, and that other seemingly more important matters, both personal and public, required the undivided attention of society in general.

If it is so important to conserve these resources, and those denying this are decidedly in the minority, then why should we not use every effort to teach the public to observe such general hygienic precautions as will, in any way, aid in equipping the school children of today, the men and women of tomorrow, for the performance of such duties as may naturally devolve upon them?

Every normal child is an asset to its parents and the Government, both State and Federal, and every possible means of protecting and developing this asset is worthy of our most careful consideration. Our churches, schools, health boards, etc., constitute the necessary equipment to give every opportunity for this much needed development, and anything short of this, either morally, mentally or physically, is a decided and irreparable loss.

I am forcibly impressed with the fact that the Oral Hygiene question, at this time, is similar to that which formally existed with reference to our natural resources, and that it will require an aggressive and united campaign on the part of all interests represented in the inauguration of this movement to arouse the lethargy of an indifferent public to its full duty.

THE CHAIRMAN. Dr. Wille, the personal representative of the President and of the United States Public Health and Marine Hospital Service, is the last speaker on the program. I will now present him to you.

ATTITUDE OF THE UNITED STATES GOVERNMENT TOWARD PUBLIC HEALTH.

BY C. W. WILLE, M. D., PAST ASSISTANT SURGEON, U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE, WASHINGTON, D. C.
Personal Representative of President Wm. H. Taft.

It is my privilege to be with you today in the capacity of special representative of his Excellency, the President of the United States, who by detailing me to represent him at this meeting has shown his interest in and has recognized the importance of the subject which has been under consideration today. This special detail indicates the President's keen interest in all subjects which pertain to the conservation of the public health. Further evidence of the President's appreciation of this subject was manifested by the prominence with which the Government's attitude toward the subject of public health was discussed in his last message to Congress wherein he advocated a closer association of the various existing public health agencies of the Government by the establishment of a Bureau of Health. It was then stated that the accomplishment of this subject would place at the disposal of the country a corps of workers, experts in their especial lines of work, whose investigations and researches would hasten the solution of problems pertaining to public health and of National scope, which in the absence of a perfectly organized federal public health unit, would not be so speedily solved.

This attitude of the Government with respect to preventive medicine has of necessity, been a gradual process of evolution, depending naturally upon the wonderful progress which the science of medicine has made since a systematic study of bacteriology was begun in the early 80's.

Naturally my connection with the Public Health and Marine Hospital Service will entitle me to speak with some authority of the activities of this particular branch of the Government Service. Such work of a public health character as is now performed by the Bureau of Animal Industry and the Census is no doubt familiar to you in a general way. Much excellent work has been done by them, and deserves recognition.

Of the work of the Public Health and Marine Hospital Service I can speak more advisedly inasmuch as I have rounded out ten years of work with this arm of the Government Service.

Following the establishment of the science of bacteriology on a firm foundation, Congress soon became impressed with its growing importance in its relation to preventive medicine, and with funds which were soon forthcoming and under the able and progressive supervision of Surgeon General Wyman, this Service has gradually matured into an effective organization of skilled workers whose efforts are directed towards the study of such problems and conditions which are a menace to the health and happiness of the community.

In a few brief words I shall try to enumerate the agencies of the Public Health and Marine Hospital Service wherewith these ends are accomplished.

First in importance is the Hygienic Laboratory; an elaborate, well equipped institution which is now established in Washington, with a corps of fifty-four workers and assistants. This institution enjoys a splendid and enviable reputation for the character of work which is being put forth. It is here that sanitary problems of National importance are being investigated. Its policy is moulded by an advisory board of four Government officers and five eminent experts who have been selected from the profession at large by reason of their especial fitness for the work with which they have become identified. In connection with this laboratory, Congress has been requested to establish a school of hygiene, which, with its facilities for study, would be available for use by members of the various State and Territorial health organizations.

The activities of the Service have been many and varied and National in scope. Upon the appearance of Bubonic Plague on the Western Coast in 1900, and again in 1907, two fully equipped well organized plague laboratories, temporary in nature, were established, one in San Francisco, the other in Seattle. The results obtained through the instrumentality of these working units are so well known that they will receive but passing mention. From the investigations instituted by these laboratories much interesting data relating to the epidemology of plague and its transmission by the flea from the rat and ground squirrel to man was obtained. The ends achieved in this campaign, likewise in the one directed against the eradication of Yellow Fever in New Orleans, and vicinity, during the summer of 1905, demonstrate what can actually be accomplished when the National, State and Municipal Health Authorities are in thorough accord. As a matter of popular interest it may be stated that as a result of this campaign the City of San Francisco is today free of human and rat plague and is being reconstructed along sanitary lines, the building code having been necessarily changed to accord with our present knowledge of rat-proof construction of buildings and wharves.

Similarly, Federal traveling laboratories have been established where yellow fever, the once dreaded foe of the South, has obtained a foothold. In the last epidemic of yellow fever which held New Orleans and vicinity in its grasp in the early Summer of 1905, the splendid organization of the Government forces which had been invoked by the local and State authorities soon proved to be an insurmountable obstacle to the further progress of this dreadful disease.

In 1905 Congress authorized the establishment of a Station for the investigation of Leprosy in the Hawaiian Islands. This extensive station is now fully equipped and already a considerable force of men with technical ability is engaged in a systematic investigation of this disease in its various phases.

In the last Annual Report of the Transactions of the Service, the Surgeon General advocated the establishment of a Federal Research Laboratory, to be located in the region of the Great Lakes, for the purpose of investigating problems pertaining to interstate sanitation, having particular reference to the dissemination of typhoid fever through polluted streams, and of typhoid fever, tuberculosis and other diseases by vessel or train.

In its quarantine functions, with its world wide ramifications, the Government has for many years maintained an effective barrier against the importation of yellow fever, Bubonic plague, small-pox, and cholera from foreign countries. Then too the medical inspection of immigrant, through its trained officers, has been responsible for the exclusion of diseased and otherwise objectionable immigrants whose admission would have resulted in the dissemination of much disease and misery, and an added tax upon the resources of the community in which they might have settled.

The results obtained through the investigation of Hookworm disease are of National importance. Through these investigations the cause and method of dissemination of this disease have been determined; and, as a result it is confidently hoped to restore the victims of this disease to health and to make of them useful and productive citizens.

More recently and of great National importance from an economic standpoint have been its researches into the cause, nature and prevalence of Pellagra. This disease has only recently been found to be of wide distribution. It is estimated that fully 10,000 cases of the disease exists throughout the South and Middle West, and as its cause is supposed to exist in diseased corn it is not surprising that the Federal Government has determined to extend its researches into this fertile field, confidently hoping to be of some use in stamping out in its incipiency a fatal disease which has ravaged portions of the old world for centuries.

These are some of the Public Health activities in which the Government has been engaged, but by no means do they represent all the efforts which have been directed toward the attainment of the physical well-being of the Nation.

Had I heard nothing upon the subject of Oral Hygiene, my personal observations and thought would have been sufficient to convert me into an advocate of the system which is made effective today. That these efforts are assured of success is about to be demonstrated in the City of Cleveland this year. The very fact that so large a proportion of our school children show the ravages of dental disease with consequent systemic infection, will render the results of the work at the end of the year all the more brilliant. Personally I am confident that there is much truth in the contention that a diseased mouth may be responsible for the inception of many of the diseases of childhood, which under favorable oral conditions might never have been contracted. This city is the first, I am told, to institute a perfected system combining school inspection, proper treatment of the teeth in the clinics and popular lecture courses, all of which are necessary to secure the best possible results. For this reason the members of the Cleveland Dental Society who were particularly aggressive in their efforts to insure the success of this movement deserve the highest credit.

In conclusion permit me to thank you for having given me your attention and to assure you that the detailed proceedings of this day will be brought to the official notice of the President. My orders directing me to perform this pleasant duty were of such a nature that the one construction I could place upon them was that my attitude was to be of a receptive nature and accordingly a full and detailed report of todays' transactions will be submitted for his information.

THE CHAIRMAN. Just a moment before the girls start their pleasant dreams—I want to suggest that as this Association has begun this most important work in Cleveland, in addition to thanking them for the enlightenment which they have given us this evening, we pledge ourselves to assist them in bringing about speedily those conditions in public schools that we all, I am convinced, are so much in need of. I thank them and I know I express your thanks to them for their splendid efforts and their excellent discourses this evening. I thank you.

MUSIC.

Dreaming...Shelley

Central and Lincoln High Girls Glee Club.

SOCIETY·ANNOUNCEMENTS

NATIONAL DENTAL ASSOCIATION

The National Dental Association; The National Association of Dental Examiners; National Association Dental Faculties; The American Society of Orthodontists; Delta Sigma Delta Fraternity and the Psi Omega Fraternity all meet at Denver during July.

The hotels of Denver are numerous and adequate. Accommodations may be had for $1.00 per day and up, for room without bath, and $2.00 per day and up for room with bath. A fair average rate will be about $2.00 and $3.00 per day, for one and two persons respectively in room without bath, and $2.50 to $4.00 with bath. Rooms and board may also be had in private families.

The Brown Palace hotel will be headquarters for the National Dental Association. Reservations for accommodations should be made in advance through the Publicity Committee.

Georgetown, Colo. A Typical Mountain Town. Published by courtesy of the Colorado & Southern Railroad.

The entire business of the National Dental Association will be conducted under one roof—The Auditorium—one of the largest convention halls in America. This building owned and managed by the city, is absolutely fireproof, and is so designed that part of it can be used as a theatre seating about 4,000 people, leaving ample committee rooms and abundant space for clinics and exhibits. All of these features can be operated without interference with each other. The following firms will exhibit:

The S. S. White Dental Mfg. Co.
The Harvard Co.
A. C. Clark Co.
The Dentist's Supply Co.
Eli Lilly & Co.
Pelton & Crane.
Horlick's Malted Milk Co.
The Denver Chemical Co.
The Chas. H. Phillips Chemical Co.
Dental Protective Supply Co.
Columbus Dental Mfg. Co.
Pinches Dental Mfg. Co.
DeVilbiss Mfg. Co.
Ritter Dental Mfg. Co.
W. A. Ivory.
W. V. B. Ames.
The Apothecaries Co.
James J. Ottinger.
Lambert Pharmacal Co.
Kolynos Company.
Mulford & Co.
Lee Smith & Son.
Ransom & Randolph Co.
American Cabinet Co.
L. D. Mosher.
Electro Dental Mfg. Co.

All indications are that the meeting will be a large and interesting one with a good attendance from all parts of the country. As this will be the first meeting of the National west of the Mississippi River, many will want to attend for the sake of the meeting and the opportunity to see some of the many attractions for which the State of Colorado and the City of Denver are noted.

It is hoped that all dentists who come will bring their wives and families with them, as the ladies and children will derive quite as much pleasure and benefit from a vacation in Colorado.

The Committee has arranged to devote the day following the adjournment of the "National" to an entertainment which will be in keeping with the season and environment.

The railroads running into Denver are: The Union Pacific; Burlington; Rock Island; Santa Fe; Missouri Pacific; Denver & Rio Grande; Colorado & Southern; The Colorado Midland, and the Moffat Road. Summer excursion rates will prevail from all parts of the country, and a more complete announcement will be made next month. From the East round trip rates to Colorado common points are: Chicago, $30.00; St. Louis, $25.00; Omaha and Kansas City, $17.50.

Notice:—It is not generally known that tickets can be purchased through from the East to Colorado Springs and Pueblo at the same rate as to Denver. By doing this the tourist can visit the numerous points of interest south of Denver (Colorado Springs, Manitou, the Garden of the Gods, Pike's Peak region, Pueblo, etc.) without any additional expense for transportation. These tickets allow unlimited stop-overs, within final limit, in both directions at Denver and Colorado Springs, giving all the time desired to attend the convention, take in the side-trips, etc. Tickets may be validated for return passage at either of the points mentioned, leaving it optional with the purchaser whether the ticket is used south of Denver. Rates from Texas and the South will be one and one-third fare for round trip. Rates from the Pacific Coast and return $55.00; and from Salt Lake City and return $22.00.

Local offices for the assistance and direction of guests will be established at the Union Station, the Brown Palace hotel and the Auditorium. Immediately upon arrival, visitors are requested to register and give forwarding instructions for mail. In case any change of address is made while in the city they are requested to notify the Committee at once. Mail addressed "care National Dental Association, Denver, Colo.," will insure prompt delivery. To avoid confusion, all matters pertaining to hotels, railroads, mail and addresses of visitors, and information in general will be handled through the Publicity Committee.

For detailed information, vacation suggestions, estimates, etc., write to Dr. H. F. Hoffman, Chairman Publicity Com., N. D. A., 612 California Bldg., Denver, Colo.

PRELIMINARY LITERARY PROGRAM.

Denver, Colorado, July 19-22, 1910.

ESSAYS.

The Laws Controlling the Behavior of Gold in Fusing and Casting. By Weston A. Price, Cleveland, Ohio.

Anatomical and Esthetic Prosthesis. By J. Leon Williams, London, England.

The Bleaching of Porcelain Fillings. By Levitt E. Custer, Dayton, Ohio.

Deficient Development of the Deciduous Dental Arches and its Treatment. By J. Lowe Young, 571 Fifth Ave., New York City.

The Gold Inlay from the Standpoint of a Gold Filling Enthusiast. By J. V. Conzett, Dubuque, Iowa.

Professional Opportunity. By Charles Channing Allen, Kansas City, Mo.

The Metric System of Weights and Measures. By David Stern, Cincinnati, Ohio.

Some of Our Difficulties and How to Correct Them. By James G. Sharp, San Francisco, Cal.

Preventive Dentistry for Children. By M. Evangeline Jordon, Los Angeles, Cal.

The Importance of a Correct Diagnosis Before the Therapeutics of Diseases of the Dental Pulp. By John P. Buckley, Chicago, Ill.

Stomatitis. By G. V. I. Brown, Milwaukee, Wis.

A Study of the Tempora-Mandibular Articulation, Cusp and Approximal Contact Points. By Martin Dewey, Kansas City, Mo.

A Review of the Dental Hygiene Movement With Suggestions for Increasing its Efficiency. By Herbert L. Wheeler, New York City.

Wednesday, 8 P. M., July 20th, open session devoted to Oral Hygiene. Address—"The Teeth and Health in Their Public Relations." By W. A. Evans, M. D., Commissioner of Health, Chicago, Ill.

Headquarters of the Association Brown Palace Hotel. Rates—Rooms without bath $2.00 per day, with bath $2.50 and $3.00 per day. See official program for information regarding other hotels, etc.

All sessions of the Association, clinics and exhibits will be held in the Auditorium.

Tourists railway rates are the best we are able to secure. Special train leaves Chicago over the Northwestern at 6 P. M., Saturday, July 16th.

BURTON LEE THORPE, *President*, St. Louis, Mo.
CHARLES S. BUTLER, *Recording Secretary*, Buffalo, N. Y.

Fishing in Colorado. Published by courtesy of the Colorado & Southern Railroad.

KANSAS STATE BOARD OF DENTAL EXAMINERS

The next meeting of the board for the examination of candidates for license to practice dentistry in Kansas will be held in Topeka, Kansas, beginning June 21, 1910, at 9 o'clock A. M. Only graduates of reputable dental schools, or those having practiced five years in some other state or territory are eligible. Of those from states having reciprocal agreement with Kansas, only the practical examination is required. For further information and blanks, address G. F. Ambrose, President, Eldorado, Kansas. F. O. Hetrick, Secretary, Ottawa, Kansas.

AMERICAN MILLER MEMORIAL

HONOR TO WHOM HONOR IS DUE.

All dentists at home and abroad are debtors to the late W. D. Miller, whose scientific mind, untiring energy and pride in American citizenship has been one of the potent factors in placing this country at the head of the profession.

Let the old adage "A prophet is not without honor save in his own country" be the exception in this instance and every loyal American be represented in a lasting memorial to his useful life.

The proposed bronze will be erected in the capital city of his native state, that he may share the well-merited distinction of being one of our greatest men.

The invitation to contribute is extended individually, and collectively through the societies of the country and your support, both moral and financial, is urgently solicited.

In order that the work may be quickly and efficiently accomplished, contributions may be sent direct to the Treasurer of the American Miller Memorial Fund, Weston A. Price, 10406 Euclid Avenue, Cleveland, Ohio.

Executive Committee: Edward C. Mills, Columbus, Ohio; J. R. Callahan, Cincinnati, Ohio; S. D. Ruggles, Portsmouth, Ohio.

NATIONAL DENTAL ASSOCIATION

CLINICS.

One of the special features of the Clinic to be held in Denver will be the surgical section. An operating room will be fitted up in the Auditorium with all modern appliances.

Several dental Surgeons have consented to give clinics that will be of unusual interest. All clinics, and all meetings will be held in the Auditorium. The rooms and arrangements for all clinics are ideal, with plenty of room and light. Dr. A. W. Starbuck, 14th and Arapahoe Street, Denver, Colo., is chairman of the local clinic committee.

All clinicians will please write him and let him know the kind of case needed, and find out what they need to take with them. For all chair clinics, cabinets will be furnished, that the clinician may have a place to put his instruments.

We solicit clinics from any member of a state or district society, and if you have not already sent in your name and the subject of your clinic, do so at once, to any member of the committee. F. O. Hetrick, Chairman, Ottawa, Kansas.

OHIO STATE DENTAL BOARD

The regular spring meeting of the Ohio State Dental Board, will be held in Columbus, on June 21-23 inclusive. All persons desiring to secure licenses, should address the Secretary and procure applications.

Applications must be returned to the Secretary, with the fee of twenty-five ($25.00) dollars not later than June 11th.

For further information, address the Secretary, L. L. Yonker, Bowling Green, O.

THE GEORGIA STATE SOCIETY

The Georgia State Dental Society will hold its forty-fourth annual meeting at Atlanta, Ga., on June 14, 15 and 16, 1910. Arrangements have been made and a program prepared that promises to make this one of the most interesting and enjoyable meetings in the history of this Society. Walter C. Miller, President, Augusta, Ga.; DeLos L. Hill, Secretary, Atlanta, Ga.

TO ATTEND NATIONAL CONVENTION

The New Mexico Dental Society will hold its third annual meeting at Las Vegas, New Mexico, July 16 to 18, 1910. On the afternoon of July 18 the Society will leave for Denver in a body to attend the National Dental Association. Chas. A. Eller, Secretary, Albuquerque, N. M.

The South Dakota State Board of Dental Examiners will hold its next regular meeting at Sioux Falls, S. Dak., July 6th, 1910, beginning at 9.00 A. M., and continuing three days. All applications for examination, together with a fee of twenty-five ($25.00) dollars must be in the hands of the Secretary by June 26. Applicants who have not complied with the above will not be permitted to take the examination. G. W. Collins, Secretary, Vermillion, S. Dak.

MICHIGAN STATE DENTAL SOCIETY

The next annual meeting of this Society will be held in Detroit, Hotel Tuller, June 13th, 14th and 15th. A program of unusual merit is being prepared and it is confidently expected that this will be the best meeting in the history of the Society. Don M. Graham, Secretary, 602 Gas Office Bldg., Detroit, Mich.

WYOMING BOARD OF DENTAL EXAMINERS

The Wyoming State Board will meet to hold examinations on the 5th, 6th and 7th days of July, 1910, at the senate chamber, Cheyenne, Wyoming. All applications must be in the hands of the secretary twenty days before the examinations, for further particulars address Peter Appel, Jr., Cheyenne, Wyoming.

OBITUARY

DR. J. Y. CRAWFORD DEAD

Dr. J. Y. Crawford, one of the leading dentists in the United States and a resident of Nashville, Tenn., died at his home, April 5th, 1910, of angina pectoris.

Dr. Crawford was born June 2, 1848, and was a native of Tennessee, his father, J. Y. Crawford, being a very prominent Methodist preacher of this state in the ante-bellum days. Most of his childhood was spent in West Tennessee. For the past thirty years Dr. Crawford had been a resident of this city, practicing dentistry here during that time.

At the outbreak of the civil war Dr. Crawford was only 14 years old, but he enlisted in the Confederate army and served in the commissary department in Florida during the entire struggle. At the close of the war he went to Bowling Green, Ky., where he took up the study of dentistry under a very competent teacher, and later took his degree in this subject at the University of Tennessee. He located at McKenzie directly after his graduation and practiced there for a number of years. He then moved to Nashville and has held an enviable reputation in the realm of dentistry since that time, standing second to none in the south in the art of dental surgery.

The following resolutions were adopted by the Nashville Society of Dental Surgeons at a recent meeting:

"It is with intense sorrow, born of human selfishness, that we mourn the departure from this life of our honored and beloved friend, J. Y. Crawford, M. D., D. D. S.

"In the death of this man, not only has our profession lost one of the most enthusiastic and untiring workers, but in the humble citizenship of the nation there is a vacancy that cannot be filled.

"In his profession, Dr. Crawford was an idealist of the highest type; and for the advancement of these high ideals he brought to bear a mighty mental vigor and indefatigable energy and perseverance never excelled. His life work was for the perfecting of his profession and in assisting his co-workers in the advancement of science for the benefit of humanity. In his intercourse with the professional brethren he was above reproach.

"While the consideration, assistance and kindness to the young man just entering the dental profession was only one of the many lovable traits of a high-minded and noble character.

"As a husband and father he was a loving and indulgent man, and to those grief-stricken ones we would express our heart-felt sympathy.

"Be it resolved, That the expression of this society be spread upon the minutes and that a copy of them be delivered to his bereaved wife and children."

NEW PUBLICATIONS

LECTURES ON GENERAL ANAESTHETICS IN DENTISTRY.—Advocating Painless Dental Operations by the use of Nitrous Oxid, Nitrous Oxid and Oxygen, Chloroform Analgesia, Ethyl Chloride and Somnoform; by William H. DeFord, B. A., D. D. S., M. D., M. A., late Professor Oral Pathology and Oral Surgery, College of Dentistry, State University of Iowa; Lecturer on Anaesthetics and Dental Surgery, Drake University Medical College; Member of Ninth International Medical Congress; President Iowa State Dental Society, etc., etc.; President Iowa State Board of Dental Examiners. Sold by The Ransom & Randolph Co., Toledo, Cleveland and Grand Rapids; and the trade generally. Price, $3.00.

"The reason the patient so rarely goes beyond the borderline lies not so much in the agent employed as in the skill of the experienced anaesthetizer, who knows the properties of the drugs he uses; who, after thorough examination, has taken all precautions; who foresees all possible 'accidents;' who will not trust to luck; and who remains vigilant throughout, until the patient returns to consciousness."

With these words, copied from *The Medical Times,* serving as what may be considered an ante-preface, Dr. DeFord begins one of the most valuable books offered to the dental profession, especially to such as practice anaesthesias. The object of the book, as stated in the preface, is to give the busy dentist a working knowledge of such general anaesthetics as can be used to advantage in daily practice. With this end in view, the "how" to do a thing is dwelt upon much more emphatically than the "why." In other words, the book is a thoroughly practical treatise, not at all a theoretical exposition.

The author has adopted the lecture style, enabling him to talk directly to the reader just as is done in the class-room, and to repeat and emphasize when necessary.

The book is divided into twenty-two chapters or lectures, under the following headings:

Has the Dental Surgeon the Right to Administer General Anaesthetics; The Value of General Anaesthetics to the Dental Surgeon; To Whom is it Safe to Administer an Anaesthetic; Elements of Danger; Shock; Dental Fatigue; Elements of Success; Relative Safety of General Anaesthetics; Nitrous Oxid Gas; Nitrous Oxid Gas Administration; Same, continued; Nitrous Oxid and Oxygen; Nitrous Oxid and Oxygen in Operative Dentistry; Ethyl Chloride; Somnoform; Somnoform Administration (three chapters); Chloroform Analgesia; Ether and Chloroform; Difficulties and Dangers and How to Meet them (two chapters, concluding the work).

The book is well printed, from large, clear type on good paper, and should be in the library of every dentist.

CORRESPONDENCE

CASTING OF LARGE BRIDGES

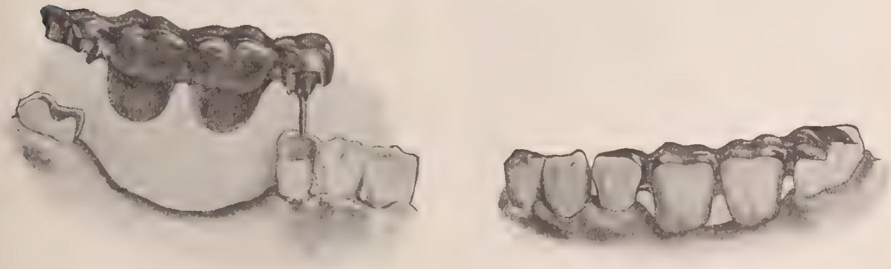
By W. H. Hayden, D D. S., Youngstown, Ohio.

Editor The Dental Summary:

Dear Doctor:—I have read with much interest all that I have seen in any of the magazines with regard to casting, especially bridge casting and other large cases. In the February Summary I noticed a little item by Dr. J. G. Lane, of Philadelphia, saying that large pieces should not be attempted because of shrinkage and consequent misfit.

I have cast at least twenty bridges, of three to six teeth each, on two and three abutments, and two eight-tooth pieces on four abutments, one having eight facings, moulding these in the mouth without impression or model, and I must say I never inserted as fine-fitting bridges by any other method.

Here is an illustration that may help readers to understand:



Description:—Two dummies, porcelain faced, anchored by an inlay in occlusal approximal surfaces of second bicuspid, with post in root canal, and distally by an inlay in a compound mesial and occlusal cavity in third molar.

I would advise placing an iridio-platinum wire of generous size throughout such pieces, and a very convenient method of doing that, in such cases as that shown, is to bend the wire that forms the post in the bicuspid at right angles, and letting it extend into the cavity in the molar, thereby greatly facilitating waxing-up and carving. It, of course, adds great strength to the finished piece.

It is needless to say that I use the Elgin casting appliance, and cast directly onto the facings, the checking of a facing occurring so seldom as not to be taken into consideration.

NEWS and OPINIONS

An Example That Should Be Followed

Dawson, Ga., May 10, 1910.

Educational Bureau, The Dental Summary, Toledo, Ohio.

My Dear Friends:—I wish to express to you my heartfelt gratitude for the help which I have received from reading the Summary and especially the inspiration derived from the articles on education .

I have undertaken to educate as far as I can the people in my own practice and town, along the lines of "Prophylaxis" and "Dental Hygiene," and in order that you may be in position to appreciate my position as a promotor of the "good work" here in Dawson, I will try to give you a brief outline of the progress which I have made up to this date—only three months since I decided to do something along this line, when I began in real earnest to talk prophylaxis, dental hygiene, etc. I called together six men of good repute, and talked this matter over as thoroughly as I could, and these men assured me that I was on the right line, and that they would help me all they could.

My idea was to get into the public schools and establish a permanent "Dental examiner;" so I called the people together in mass-meeting and presented the subject. I was highly pleased with the success of the meeting, which was only a few days ago. I have since delivered an address before the Ladies Literary Club, which was received very enthusiastically.

I have interested about twenty-five of my most intelligent patients to take "Prophylaxis" and I feel like it will not be long before I will have more interested.

But my great desire is to get into the schools, and I am writing you for help, if you can please lay out a plan by which I may succeed in getting into the schools, by which I may get the intelligent ear of the school, and health board, the parent, etc.

I notice your work, and I am desirous to obtain information in reference to the Dental Talks, Lantern Slides, etc. What you will recommend that I commence with, how I may get up a lecture which will be instructive and helpful to the laity.

I think that I can secure a lantern, etc., here—but I want the slides, all the information possible to obtain in reference to same.

And especially do I desire the Dental Talks, Lectures, etc.

Thanking you in advance, for your kindness in this matter, I am

Yours very truly,
Chas F. Crouch.

This has the right ring. Dr. Crouch is in earnest, and his town is fortunate in having him among its citizens. We have done all that we see the way to do in cooperation with him. Such men need very little help. He sees the need, and has gone to work earnestly to supply it. Earnest work always is effective. Keep your eye on Dawson, Ga.

School Examination

Report of the Hancock County Dental Society Covering Findlay Schools.

The examination of the pupils of the schools of Findlay, made by the Hancock County Dental Society, as authorized by the Board of Education of the public schools, has been accomplished. The work was greatly facilitated by the courteous assistance so kindly given by Superintendent Smith and his corps of teachers, as well as by the teachers of the parochial school.

"We have examined 1,861 pupils in the public schools and 131 in the parochial school, making a total of 1,992 pupils, going over each examination blank, making a full detailed examination of each case, tabulating by grades in each building, also summarizing each building. The report shows that nearly 84 per cent of the pupils of the schools are in need of either instructions in the use and care of the mouth and teeth, or require actual dental services to render the oral cavity healthy and capable of performing its full physiological function. The school system of the city offers the best opportunity to spread both knowledge and training in this direction and to show the great value of such care and attention from an economic standpoint.

Respectfully,
Jacob H. Boger,
President Hancock Co. Dental Society.
J. D. Altenburg, *Secretary.*

LISTERINE

The best antiseptic for a dentist's prescription

As a daily wash for the preservation of the teeth, and for maintaining the mucous membrane of the mouth in a healthy condition, Listerine occupies a first place in dental and oral therapeutics. Listerine is truly prophylactic, in that it exercises an inhibitory action upon the acid-forming bacteria of the mouth, and thus maintains the alkaline condition so necessary for the welfare of the teeth.

LISTERINE TOOTH POWDER

An innovation, in that it possesses neither fermentative nor harshly abrasive ingredients, Listerine Tooth Powder very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouthwash of Listerine, suitably diluted.

¶The undersigned will be pleased to send supplies of Listerine Tooth Powder samples for distribution to patients, upon receipt of the dentist's professional card, and this advertisement.

Lambert Pharmacal Co., St. Louis, Mo., U. S. A.

Antiphlogistine

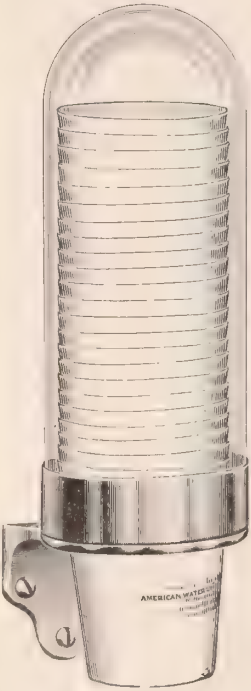
TRADE MARK

We are constantly receiving from dentists all over the country testimony to the value of Antiphlogistine in their practice. They use it in all cases of inflamed gums and jaws, and their unanimous testimony shows that a beginning inflammation is resolved while an abscess is always localized, so that it can be opened from inside the mouth. It may be used directly to the gum and on the outside of the face at the same time.

Send for Booklet

The Denver Chemical Mfg. Co.

New York.



Patents Pending

By drawing the bottom cup another comes into position automatically

Aseptic Paper Cups for the Dental Profession

Notice the New Reinforced Bottom Cup

and the new way of packing them in cartons of 25 each, or 100 to the box.

The Dental Cup Bracket

holding 25 cups, is installed handy to the chair, making it very convenient in serving the individual cup.

Patients are not guessing about this cup being sterilized, as they are the common glass.

Hold water at 112°.

Hygienic, Dainty.

Patents Pending

MANUFACTURED BY

American Water Supply Co. of N. E.

251 Causeway St., Boston

Free Dental Service in Pittsburg

A plan to devise free dental service for deserving poor of Pittsburg was considered at the closing exercises of the twenty-ninth annual meeting of the Odontological Society of Western Pennsylvania. A section on oral hygiene and public dental education was organized, the following officers being elected: President, Dr. W. L. Fickes; secretary and treasurer, Dr. J. F. Biddle; executive committee, Dr. H. E. Friesell, Dr. H. S. Haslett, Dr. J. H. Crawford.

The society elected the following officers: President, Dr. B. M. Loar, Mt. Pleasant; vice president, Dr. Charles E. Peters, Pittsburg; secretary, K. S. Perry, Irwin; treasurer, Dr. M. S. Burns, Sewickley; board of censors, Dr. W. S. Cook, Dr. H. C. Neale, Dr. H. F. Koontz; auditing committee, Dr. R. M. Erwin, Sewickley, and Dr. H. F. Koontz; librarian, Dr. A. C. Barclay; membership committee, Dr. A. W. McCullough, Dr. W. A. Kelley, Dr. S. M. Steuffer; committee of dental literature, Dr. W. L. Fickes, Pittsburg; Dr. W. A. McCready, Pittsburg; Dr. F. H. Magill, Washington, and Dr. J. A. Robinson, Pittsburg.

Marriages

April 24—Dr. L. E. Smith, and Miss Leslie D. White, of Waterloo, O.

May 3—Dr. C. V. Kratzer, and Miss Martha W. Crooks, of Reading, Pa.

April 15—Dr. R. E. Byers, of Batavia, Ia., and Miss Ruth Hull, of Ottumwa, Ia.

Deaths

March 19—Dr. A. J. Sawyer, Cambridge, Mass., of pneumonia, aged 70 years.

April 7—Dr. L. A. Nearing, Syracuse, N. Y., aged 85 years.

April 9—Dr. M. R. Stover, Casper, Wyo., of acute heart trouble, aged 33 years.

April 16—Dr. E. Treat Payne, of Norton, Conn., aged 72 years.

April 16—Dr. J. O. Gilbert, Atlanta, Ga., aged 36 years.

April 18—Dr. W. J. Mores, Livermore Falls, Me., of consumption, aged 45 years.

April 18—Dr. William Jarvis, Claremont, N. H., of cerebral hemorrhage, aged 50 years.

April 21—Dr. A. H. Hampton, Longmont, Colo., committed suicide.

May 4—Dr. I. A. Stitt, of Peru, aged 52 years.

May 6—Dr. John C. Reynolds, Oil City, Pa., from complication of diseases, aged 58 years.

Tantalum Dental Instruments

Deputy Consul-General Archibald B. Dorman furnishes the following information concerning the manufacture of tantalum dental instruments, recently established in Berlin:

Many advantages, besides lower prices, are claimed for tantalum dental instruments over the steel instruments, which they are intended to supersede, viz, hardness; freedom from effects of bases and acids, except fluoric acid; and capacity to withstand a temperature of more than 400 degrees centigrade. American dentists say that the tantalum instruments do not rust when left exposed to the air, but retain their polished surfaces, besides proving more lasting than the steel instruments. They can be cleaned by being washed in soda and disinfected by being boiled in water containing soda. In working with phosphate and silica cements and amalgams, tantalum instruments have special advantages; they are not affected by iodine, etc. They may be used, in working root canals, with trikreosol acids, where steel can not be used.

Oral Hygiene Exhibit

An exhibition devoted to oral hygiene was held in the assembly room of the Metropolitan Life Building, New York City, May 12, 1910, under the auspices of the Dental Hygiene Council of New York City. This exhibition is part of the national crusade against dental diseases, which was started by the Dental Hgiene councils of Massachusetts, New York and Rhode Island. The campaign has as one of its chief aims the education of the public to the necessity of dental inspection in schools.

An examination last year of 187,000 children in the public schools of New York showed that the number of cases of defective teeth more than doubled that of all other physical deficiencies. Almost 65 per cent of the school children examined in this city were found to be ''dental cripples.''

Dentists Honor a Confrere

A notable gathering attended the dinner given at New Haven, Conn., in honor of Dr. Edward S. Gaylord, by the New Haven Dental Association. It was given in respect to Dr. Gaylord, who has long been a faithful member of the organization, and in honor of his lengthy career as an active practitioner. During the evening Dr. Frederick W. Brown, who occupied the seat of toastmaster, presented Dr. Gaylord with a handsome electric light standing seven feet high and made of Egyptian hammered brass.

The Texas Meeting

San Antonio is the meeting place for the next annual convention of the Texas State Dental Association to be held in 1911.

The election of officers and the choosing of a place for the next meeting were items of business taken up just before the adjournment of the state convention held at Houston.

The election of officers resulted as follows: Bush Jones, Dallas, president; Charles L. Watson, Mexia, first vice president; Guy Morgan, Paris, second vice president; J. G. Fife, Dallas, secretary and treasurer.

The new executive committee includes Dr. A. F. Sontag, Waco; H. M. Davison, Hubbard; W. H. Scherer, Houston.

Recent Patents of Interest to Dentists

943884—Dental instrument, W. B. Miller, Altoona, Pa.

944158—Revolving cabinet, M. Smith, Crabtree, Oregon.

944115—Dental plugger, C. F. Tully, Madera, Cal.

944254—Making patterns for casting hollow dental fillings, E. P. Binford, Chicago, Ill.

944992—Dental-floss spool, A. J. Holmes, Rockville, Conn.

944836—Artificial tooth, J. A. Williams, Fort Wayne, Ind.

945713—Dental scraper, Charles P. Fritz, Philadelphia, Pa.

945194—Dental chair, Frank Ritter, Rochester, N. Y.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

The Guest

My daddy is a 'fessor at a big, big 'cademy,
And he has got a picture-book of stars, called 'stronomy.
 But, oh, you ought to hear him talk to me and brother Jack
 'Bout all the funny folks who live up in the Sody Ack.
I don't know what the Sodys do
And never saw an Ack, did you?

My daddy has a telescope that pokes up through the trees.
He let me see the Ram one night, the one with Golden Fleas,
 And pointed out the Fishes in the Pie Seas of the sky.
 I couldn't find the Fishes, so I tried to find the Pie,
And found it, too, all by myself,
On Aunt Lucinda's pantry shelf!

—Harold Skinner in *Woman's Home Companion* for June.

Robberies

March 19—Dr. F. F. Richard, Janesville, Wis., $50 in gold plate.

March 20—Drs. Cottrell and Conway, Hornell, N. Y., large quantity of gold.

April 11—Dr. Wauh, of Iola, Kas.

April 11—Dr. W. H. Porter, Iola, Kas., $30 bridge, and $9 filling.

April 12—Springfield, Ill. Dr. A. E. Converse, gold, $50. Dr. H. G. Nelch, gold and finished work, $50. Dr. B. L. Renfro, gold and finished work, $45. Dr. Grafton Monroe, gold, $25. Dr. C. N. Neal, gold and finished work, $175. Dr. A. Lambert, gold, $25. Dr. O. L. Frazee, gold, $20. Dr. J. L. Goodson, gold, finished work and jewelry, $150. Dr. O. H. Seifert, gold, $50. Dr. G. C. Carruthers, gold and finished work, $100. Dr. Theo. F. Knoll, gold, $50.

April 13—Drs. Overholser, and Wilkins, Freeport, Ill., $25 worth of gold and dental material.

April 13—George T. Vose Dental Parlors, of Charlotte, N. C., $1,200 of platinum, facings and crown work.

April 13—Dr. Harry C. Howell, Dr. Charles W. Howard, and Dr. Charles S. Fowler, of Watertown, N. Y., several hundred dollars worth of gold filling.

April 14—Drs. G. L. Kelton, and W. T. Rowland, Van Buren, Ark., $75 worth of gold.

April 16—Dr. Roper, Prescott, Ariz., $4 worth of leaf gold.

April 20—Dr. P. J. Morton, Lincoln, Neb., gold to the amount of $60 or $70.

April 21—Dr. J. B. Hayes, of Davenport, Ill., $100 worth of gold.

April 28—Lincoln, Neb., Drs. P. J. Morton, J. R. Davis, T. C. Hosterman, gold worth $100.

April 29—Dr. S. A. Campbell, Mattoon, Ill., gold and platinum worth $600.

May 1—Seven Dentists' offices at Pittsburg, Pa., were entered and $1,000 in gold leaf taken.

Dayton, Ohio, May 16—Burglars operated last night in 17 dental offices, located principally in the uptown skyscrapers, and secured gold, silver and aluminum valued at $1,000, after which they effectually made their escape.

Two suspects were encountered late at night in the Hollencamp Building on Jefferson street. In this building Dr. C. A. Lehman's office was raided, and gold bridge and crown work valued at $268 was stolen, as well as a lady's gold watch. The losses ranged from $20 to $125. The losers were Dr. D. G. Porter, Dr. W. H. Sells, Drs. W. E. and E. B. Tizzard, Dr. Rowland, Union Dentists, Dr. J. A. Sinnett, Dr. H. A. Hubbard, Dr. H. G. Spitler, Dr. L. C. Weimer, Dr. G. A. Billow, Dr. L. O. Addison, Dr. L. W. Wright, Dr. A. J. Hibschman, Dr. Warner, Dr. H. A. Penfield, Dr. O. B. Kneisley and Dr. Z. N. Wright.

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX JULY, 1910 No. 7

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society

and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. Bethel, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple
St. Louis	Dr. E. E. Haverstick, Boyle and Maryland
Kansas City	Dr. Martin Dewey, Argyle Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.
Los Angeles	Dr. B. Frank Gray, Security Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Louisville	Dr. H. B. Tileston, Equitable Bldg.
Memphis	Dr. D. M. Cattell.
Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg
Richmond	Dr. F. W. Stiff. 600 E. Grace St.
New York City	Dr. W. H. Sieberst, 1 W. 34th St.

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, in U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

A NEW TYPE OF BRIDGE

By Frederick B. Kremer, D. D. S., Minneapolis, Minn.

The accompanying cuts are illustrative of a new type of bridge designed by Dr. Henry A. Knight of Minneapolis, to cover a class of cases that have usually been exceptionally difficult to handle, by reason of the piers or abutments being at such angles as to make it impossible to cement the bridge in position, when made by ordinary methods.

Fig 1 shows the type of case referred to, it being a duplicate of the original case in which the idea was developed. Fig. 2 shows the abutment of the third molar in position, and the balance of the bridge suspended above it, ready to drop into place. Fig. 3 shows the abutment for the third molar, while Fig. 4 shows the bridge completed and in position. Fig. 5 shows the construction of the dummies in this particular case, although the dummies may be made of any type desired, these being made of ordinary rubber teeth with cast boxes, into which the teeth are cemented.

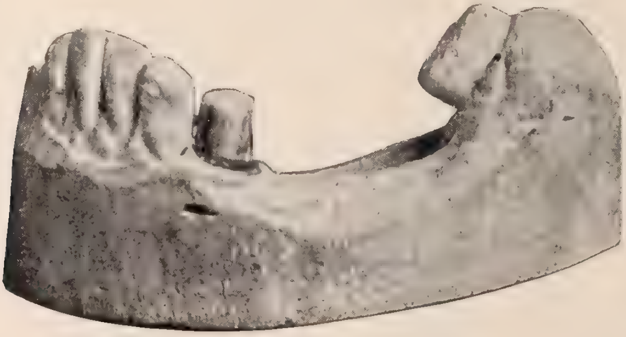


Fig 1.

While at first sight the construction of this bridge might seem a somewhat difficult mechanical feat, in reality it is very simple, all that is necessary being care in detail, as the fittings are very close.

In describing the method of construction, I shall confine my description to the type of attachment used in this particular case, although the process may be employed with any form of attachment desired. Briefly the process is as follows:

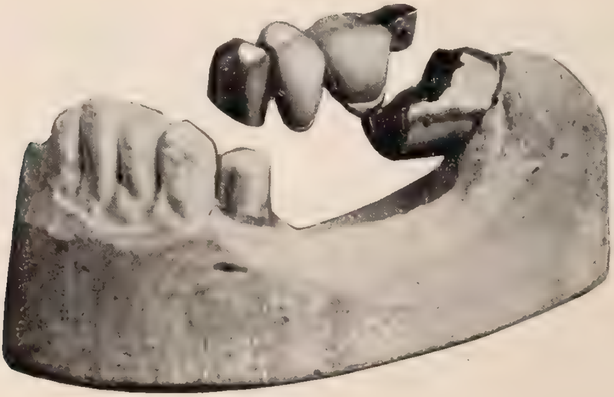


Fig. 2.

Prepare the abutment for the reception of shell crowns which should be made and placed in position, after which a plaster impression should be secured and the whole case transfered to the articulator. Wax should now be built on to the mesial aspect of the molar attachment, and carved to occlusion, after which, with a small, sharp blade, a box or dove-tail

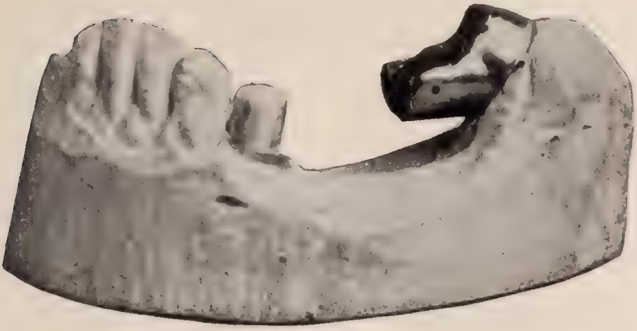


Fig. 3.

should be carved in it, having it present the appearance, when completed, as shown in Fig. 3. At this stage of the process, the mesial aspect of the box should be parallel with the bicuspid, although due to the angle at

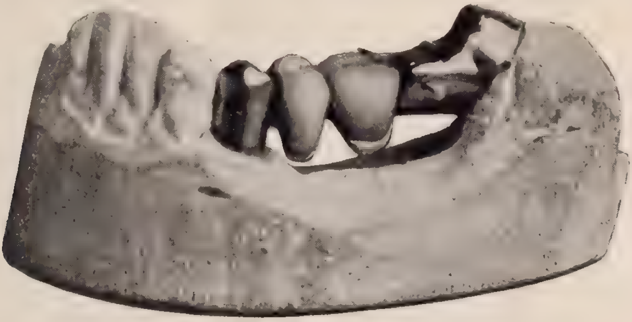


Fig. 4.

which the model was placed for photographing, this does not show as distinctly as it should. By referring again to Fig. 3 you will observe that a hole has been drilled through the box. This should be done in the wax and a piece of graphite inserted. The crown and wax should now be carefully removed from the model, invested and cast, after which it

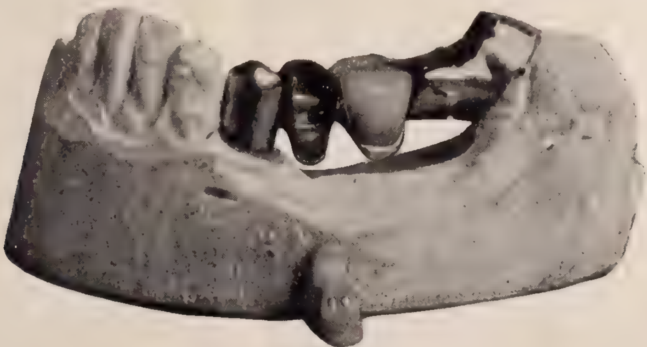


Fig. 5.

should be carefully finished and placed back in position on the model. The remaining procedure is the same as that employed in constructing any other bridge, the only difference being that you are now working to the inlay attachment in the rear, instead of to the crown. Prior to casting the intervening teeth of replacement, the inlay which fits into the box, should be drilled to correspond with the holes drilled in the box, so that when completed, a cotter-pin may be placed in position as indicated in Figs. 4 and 5. The pin shown in the photograph is an ordinary headed pin, and is used in this instance, only for purposes of illustration. For use in the mouth an Iridio-Platinum pin, 17 gauge should be inserted before the cement, with which the box or dove-tail is filled, sets.

The writer has constructed a number of these bridges in his own practice, and thus far the results have been most gratifying.

SOME DENTAL-MEDICAL CONSIDERATIONS

By T. S. Conover, M. D., Flint, Mich.

THE historical association between medicine and dentistry dates from very early times. Hippocrates, the father of medicine, devoted some time to dentistry. He invented forceps, observed the necessity for cleaning the teeth and left a formula for a dentifrice, as follows: a charmed rabbit's head and three charmed mice ground into a powder. He also recognized that destruction of the bones of the jaw might follow disease of the teeth and might even end fatally. Celsus also practiced dentistry. He advocated the filling of carious teeth with pieces of slate wrapped in cotton. Galen differentiated certain dental diseases and left formulas for a number of tooth washes and powders. Ambrose Pare invented forceps and a dental splint. The great John Hunter did not neglect the teeth in his wonderful researches and wrote a treatise upon the natural history of those of the human being. From the days of Hunter until recent times, medical men have given little attention to dental subjects but twenty years ago Dr. Edwin Pynchon of Chicago was lecturing upon and teaching them to his great credit.

The education of the modern dentist is such that he can no longer be considered a filler of teeth and a maker of plates, but should be an astute diagnostician of diseases of the mouth and their relation to general disease. Dentists are now specializing in certain directions such as treatment of disease of the gums, dental surgery, and orthodontia and are more and more interested in the consideration of the larger problems of the relation of dental defects, to general disease.

It is a well known physiological fact that the nose is the normal organ of respiration; that air passing through the nose is warmed and moistened for the lungs; that nasal respiration is longer and deeper than that by the mouth; that the amount of oxygen absorbed is greater, and that in the presence of mouth breathing, food is improperly masticated and insufficiently moistened with saliva and that digestion is correspondingly less perfect. As the mouth breather must needs use the one cavity for two functions, the consequence is that food is inadequately masticated and insalivated and hastily swallowed. The natural functions are much impaired through this inadequacy and its baneful influence is far reaching. The evils of nasal obstruction have been grossly exaggerated in some directions and too much importance has been ascribed to quite trivial degrees of obstruction. The development of the tongue, jaws, teeth, nose largely depends upon their proper use in early childhood. The tongue being an organ of mastication and a muscle, develops through use just as do other muscles of the body. The tongue naturally fills the mouth in such a way as to give the upper and lower jaw their proper shape with the balancing influence of the external muscles of mastication. In the mouth-breather the lower jaw drops, the pressure influence of the tongue is lost upon the upper jaw, the external muscles exert an abnormal pressure from without. There result from all this a narrowing and shortening and insufficient space in the jaw for the eruption of the permanent teeth. They come in irregularly—the arch is high and V shaped, the nose small and undeveloped inside and out, there is an under or an overshot jaw, and an illformed face.

A slight consideration of the anatomy of the nose and throat will not be amiss at this time. The nose, the normal organ of respiration consists of two cavities divided by a partition called the septum. On either side of the nose laterally there are shelves, three in number on each side; the inferior, middle and superior turbinated bodies. They are covered by a delicate mucus membrane lined by ciliated epithelium and are rich in blood supply. Under different atmospheric influences they expand and contract. The influence of an acute cold is well known. An infection causes a disturbance of circulation, the turbinated bodies are enlarged; there result obstruction to nasal breathing and the distressed and full feeling in the head which interference with the general circulation creates. Posterior to the nose is located one large, irregular shaped cavity called the nasopharynx. From this cavity there are different apertures, two aerating tubes leading to the ears, one of large size into the pharynx proper and two smaller into the nose. In this cavity the normal structure consists of a preponderance of the same elements as normal mucus membrane of those parts known as adenoid or lymphoid tissue.

It is a continuation of this structure that forms the faucial tonsils, one on either side of the throat between two muscles commonly called the anterior and posterior pillars of the throat. These structures when normal have a function and should not be disturbed, but modernized methods of living have invited through dust germs, changes of atmosphere, badly ventilated houses and other influences an hypertrophy of these tissues, in some instances to an extent to menace the individual's welfare. They cause obstruction to normal respiration; through lowered resistance they are vulnerable to such disease germs as those of tuberculosis, diphtheria, rheumatism, measles, scarlet fever, and typhoid fever and many other kinds of infection find their beginning in these structures, the tonsil and adenoids. These tonsils and adenoids have a normal drainage system, the lymphatics down the sides of the neck; enlarged glands of the neck indicate that they are diseased. The blood circulation of these structures comes from the same system that supplies the nose. When the adenoid structure is congested the circulation in other structures of the nose suffers and disease of the turbinated bodies appear. They become enlarged and crowd the forward cavity of the nose; they obstruct the natural outlets of the accessory sinuses causing acute and chronic inflammation of these cavities and interfering with their proper aeration. The natural openings of the maxillary antrum frontal sinus and anterior ethmoidal cells are under the middle turbinated bodies, those of the posterior ethmoidals under the superior turbinated. The sphenoidal has an opening in the superior meatus. An undeveloped upper jaw does not give room for the proper growth of the septum of the nose. This is the cause of the deflection and the resulting nasal obstruction—rarely seen before the age of seven years but is common in the adult. Other forms of disease to be considered are reflex irritation, direct extension of morbid processes or septic absorptions from the mouth. Attacks of epilepsy have been created by peripheral irritation among which is dental caries, and cases are recorded in which relief and cure have been afforded by dental treatment. Neuralgia of the fifth nerve and tic douloureux are too often associated with dental troubles to require more than brief mention. Brachial neuralgia may arise from disturbances of the teeth. A considerable number of cases have been recorded of facial paralysis due to dental lesions. This is undoubtedly owing to the close association between the fifth and seventh nerve through Meckels, the otic and submaxillary ganglia. Trismus, a tetanic contraction of the facial muscles, due to irritation of the fifth nerve, or a local cellulitis at the angles of the mandible, may arise from suppuration at the apex of a lower third molar. As to cardiac irregularity, Douglass Powell records a case that was completely cured by attention to the teeth. Affections of the ear are often associated with dental irritation and are frequently cured by attention to carious teeth. Empyema of the antrum from caries is a well known pathological condition but let me tell you professional gentlemen that the dentist is not wise who extracts a sound tooth for antrum drainage. Such cases should be drained from the nose. Obviously, where a diseased tooth is the cause of antrum diseases it should be removed. Myeloid sarcoma frequently originates from a fragment of buried tooth.

Epithelioma or cancer of the mouth and tongue is frequently started by irritation from a tooth and many cases of cancrum oris unquestionably arise from septic teeth. It is possible that cases of endocarditis may trace their origin to septic teeth; it is well known that this infection follows tonsilitis.

There are many local conditions which simulate dental diseases. Chancre of the lip and jaw has been mistaken for alveolar abscess and cancer has been treated for simple ulcer. Chronic inflammation of the lymph glands of the neck may be due to septic teeth and it is probable that tuberculosis is conveyed through this medium. Pyorrhea alveolaris, that *bete noir* of the dentist, is more closely associated with general disease than is dental caries. This disease may be defined as an inflammation of the peridental membrane due to lowering of natural resistance to the ordinary germs of the mouth. Patients suffering from pyorrhea complain of a train of symptoms such as loss of appetite, constipation and indigestion, are anemic and have malodorous breath. It has been claimed on good authority that a certain percentage of pernicious anemia is induced through this disease; indeed, that all cases arise from infection in the mouth. Rheumatism has been observed following alveolar abscess and there is no doubt that it arises from tonsilitis.

There is a popular opinion among the laity and almost as largely entertained by the rank and file of the medical profession that it does not matter what becomes of the deciduous teeth. One often hears the expression, ''Oh, they are only his first teeth.'' The child has been given all sorts of rubbish to eat under the belief that it does no harm, but broadly speaking, carious first teeth mean carious second teeth and it means that the first teeth do not fulfill their function in developing the alveolar process. Carious first teeth mean infection of the alveolar substance and arrest of development and eruption of the underlying permanent teeth.

Just a few words regarding diet. There is a popular fallacy that it does not matter what is fed to a child and a soft diet is supposed to be appropriate, but a soft diet is usually of milk or the carbohydrates. Fermentation of the carbohydrates forms lactic and butyric acids and these remaining in contact with the teeth for any length of time attack the lime salts of the enamel and a cavity results. Bearing in mind these facts, it is obvious that anything that favors the lodgment of carbohydrates very much increases the risk of caries. Such food stuffs as caramels, taffy, chocolates, white bread, biscuits, cakes, are very adhesive; milk leaves a film on the teeth. Food stuff plays an extremely important part in the development of the teeth. If the mother is poorly supplied with lime and phosphates during gestation, it is likely that the child will be affected and the teeth poorly developed. The same principles apply to the diet of the child between twelve months and twelve years. There has been in the past, both in dentistry and medicine too great a tendency to regard the teeth as isolated organs, their functions not intimately associated with those of other parts of the body. Pawlow has shown that mastication is the natural and, therefore, the best stimulant for gastric and salivary secretion. Efficient mastication implies absence of caries.

The teeth then must be recognized as an intimate part of the alimentary system physiologically and pathologically. Medical men and some dentists are extracting teeth that should be left in situ. They appear to little comprehend the value of a deciduous tooth in the development of the jaws and permanent occlusion. The medical inspection of school children is becoming popularized and it is highly probable that the dentist will eventually be called upon to add his attestation to every certificate of health.

A METHOD OF TREATING MANDIBULAR FRACTURES*

By Robert T. Oliver, D. D. S.

Examining and Supervising Dental Surgeon, U. S. Army, West Point, N. Y.

MODERN surgical science teaches that the essential requirements for successful treatment of mandibular fractures are readjustment of fragments, restoration of normal dento-articular plane, fixation, immobilization, rest, nourishment and aseptic hygiene.

Of these cardinal factors there is little doubt but that fixation and immobilization have always proved the greatest problems. Surgical history is replete with various and many methods for the accomplishment of these ends, and a review of the literature on this subject shows that during the past half century, or since the Civil War, there have been two general schemes in vogue, each with numerous modifications, namely, the application of external support through medium of mentomandibular splints, with occipitomental counter-pressure and the application of internal support through adaptation of interdental splints, with occipitomental counter-pressure.

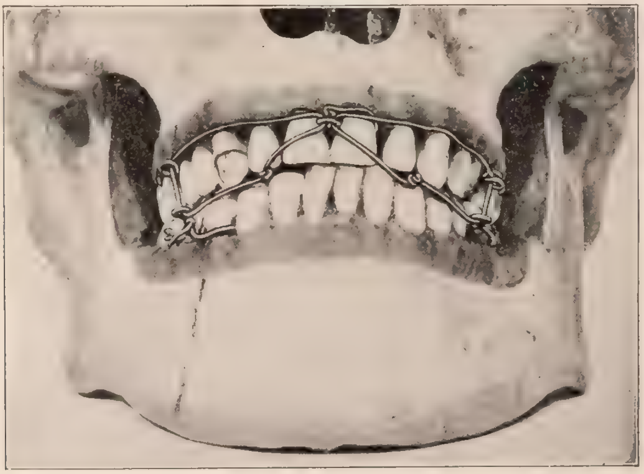


Fig. 1.—Front view, showing detail of wiring by anchor loop and traction wire method.

Generally speaking, the medical profession has advocated the first, and the dental profession, from which it emanated, has championed the second method.

---

*Read in the Section on Stomatology of the American Medical Association, 1909. Published in THE DENTAL SUMMARY by special arrangement with the Journal American Medical Association.

In addition to these, there has been frequent recourse to processes of wiring and in recent years to a natural development of these processes, the adjustable fracture bands and traction-bars.

So many well-founded objections have been raised against the use of external splints, mainly on account of their general inefficiency in maintaining adjustment of contour and articular plane, that the method has become practically obsolete. The introduction of interdental splints marks an epoch in the history of maxillary fractures of which dentistry may well be proud. It gave at once such assurance of holding the adjustment and maintaining the articular plane, thus restoring normal function and preventing deformity, that it rapidly sprang into prominence and custom. But the indiscriminate use of these appliances without due consideration of the individual requirements of each case, or of the kind, style or application to the cases presenting, combined with such objections as uncleanliness, strain and soreness of muscles from jaws being kept open, the length of time required before appliance could be constructed and the discomfort to the patient in securing proper impressions, have produced a marked decrease in their popularity.

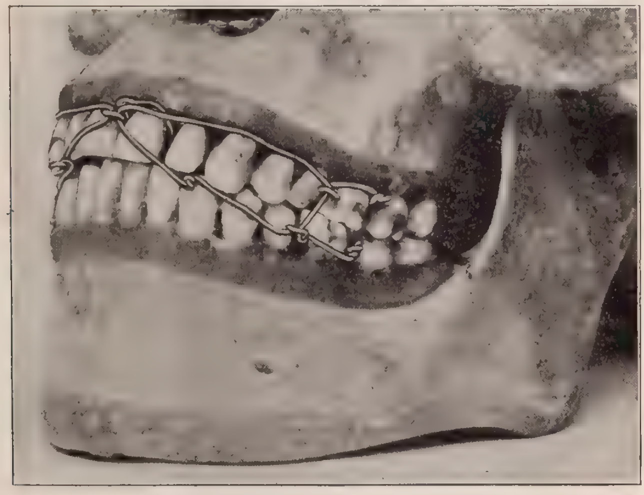


Fig. 2.—Left lateral view of same subject.

The objections to the usual methods of wiring have been due to faulty modes of application and to the kind, size and strength of wire employed. In a great majority of cases the ordinary silver suture wire, 26 to 30 gauge, has been used. This always stretches under stress, becomes loosened from around the teeth, releasing the traction necessary to fixation and is often forced into the soft tissues, producing distress to the patient and the usual consequences of irritation and inflammation.

The adjustable fracture band and traction-bar method has proved very efficient. Its disadvantages accrue from the numerous appliances required, which tend to hinder its general applicability.

Being firmly convinced that a process of wiring presented the simplest, easiest, quickest and surest method of treating these cases, I began a series of experiments some years ago, with a view to the improvement of its technic and the development of a standard method whereby rigid fixation and absolute freedom from mobility could be obtained. It was recognized early that much heavier wire, less ductile than silver, would be necessary, that the old figure-of-eight plaiting of wire across the line of fracture must be discontinued, and that some plan to prevent lateral mobility of jaws must be devised.

With these objects in view, various schemes were tried, with varying success, until the following method was adopted, in 1903. Since then it has been used exclusively, with such splendid success that not one case of failure to unite, deformity, deflected articular plane or impaired function has resulted. For purpose of illustrating the method let us suppose a case with simple fracture, slightly transverse through socket (distally) of right first bicuspid and mental foramen, slight deformity, articular plane deranged, long anterior fragment drooping somewhat and short posterior fragment drawn slightly upward and inward—the typical picture. The mouth is first thoroughly cleansed with hot antiseptic wash and swabs, the location and extent of fracture determined and the fragments adjusted and articular plane restored. Then a piece of soft drawn copper wire, about 4 inches long, previously annealed and sharpened at each end, is inserted from without inward between the right lateral and cuspid, is pulled through about half its length, burnished lingually to

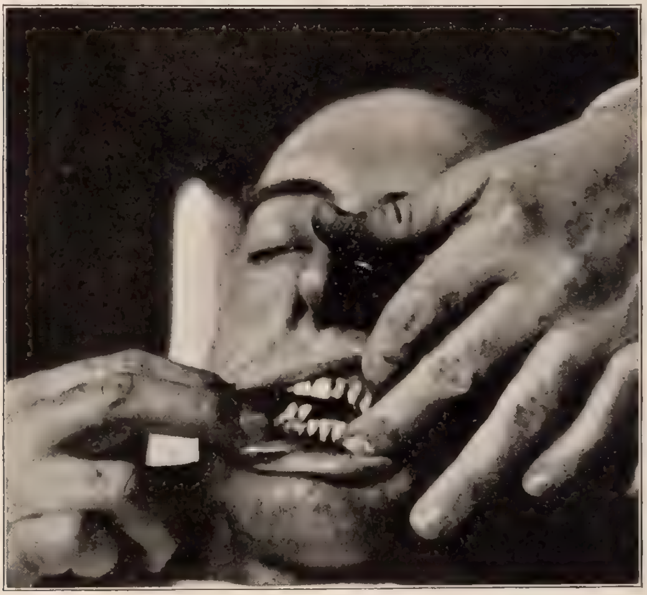


Fig. 3.—Cadet ———, U. S. M. A. Compound fracture, transverse through socket of right lateral. Showing deformity one hour after occurrence.

cuspid and then inserted from within outward between cuspid and first bicuspid, pulled through buccally again, where it is held. The other end is now brought back and inserted at the latter interproximal space, pulled through taut, burnished lingually to first and second bicuspid, carried back across line of fracture, inserted from within outward between first molar and second bicuspid, pulled through buccally again, brought forward taut across line of fracture and twisted with remaining end at a point opposite an interproximal space. The adjustment of contour and articular plane is now verified; after which the ends are tightly twisted, bringing firm traction through axis of each fragment across line of fracture which temporarily will hold the parts in their exact position. The twisted ends are clipped off, leaving a stub about an eighth of an inch long; this stub is turned upward and inward, entering the interproximal space far enough to prevent it from injuring any soft tissues with which it may come in contact. Immobilization is next accomplished by wiring lower to upper teeth, while occupying normal occlusion. This is done by the following original method, which insures against the possibility of *any* mobility, either lateral or perpendicular: First, an anchor loop is made by taking a six-inch piece of annealed soft-drawn copper wire, 20 gauge (B. & S.,) bending it in the middle

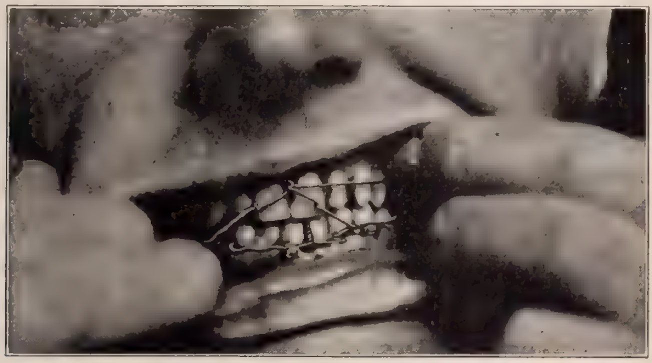


Fig. 4.—Same patient, front view, with jaw wired.

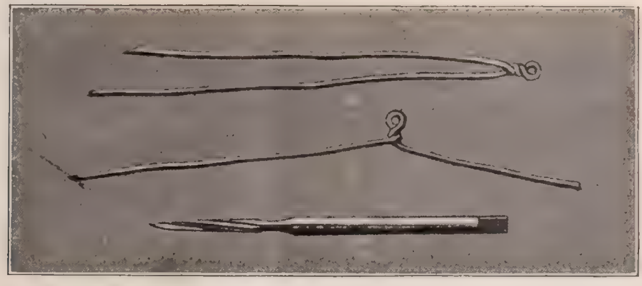


Fig. 5.—Median and lateral anchor loops and Peeso's reamer.

around a small-sized mandrel about one-thirty-second of an inch in diameter, and twisting tight by one full turn with flat-nose pliers (the twist may be strengthened by "tacking" together with a small bit of hard solder.) The two long ends are now straightened out and placed parallel to one another, one end being snipped off one-fourth of an inch shorter and both ends pointed. They are now inserted from without inward, between the two superior central incisors, pulled through taut until loop rests, horizontally, firm against both teeth at the mesiocervical border. Each end is now carried laterally from median line, burnished, respectively, to lingual surface of each central, and inserted from within outward between its respective central and lateral, pulled through firmly, brought forward to median line, above loop, and twisted tightly together, clipping off and turning stub into interproximal space as before noted. This forms a solid, permanently fixed, median anchor loop from which counter-traction may be had from each lateral half of mandible for support and the prevention of lateral mobility. Four pieces of the same wire, about 3 inches long, are in turn bent around the mandrel as before cited, forming the loop about one-third distance from one end, and the long end sharpened. These lateral anchor loops are placed around solid teeth, one on each side, usually first molars or second bicuspids, in both upper and lower jaws, and serve as anchorages for the traction wires, one for each side. These traction wires, threaded through all the loops commencing with median, then superior lateral, then inferior lateral and finally twisted with outer end midway between inferior lateral and median loop, exert a firm and constant pressure between upper and lower jaws and at the same time maintain counter-traction laterally. The twist is clipped short and may be turned upward under upper teeth. The lateral loops are positioned by inserting long ends into mesoproximal spaces of the respective teeth selected, pulled through taut until loop rests horizontally against cervicoproximal border, then carried backward, burnished to lingual surface, inserted from within outward at distoproximal space, pulled through firmly and twisted to outer end as near the latter proximal space as possible in order that the increased size of twist, being too large to pull back through space, will prevent the anchorage loop turning under stress of subsequent traction and also that the twist may be clipped off and turned into the space as above shown. The traction wires are about 7 inches long, of same material, and should be annealed before being used. Care should be exercised to keep each one perfectly straight between loops and pulled taut in passing through each loop. When properly placed there will be produced a triangular geometrical figure with its first "stretch" a long horizontal line from median to superior lateral loop, a short perpendicular line from superior to inferior lateral loop and a long slanting diagonal line from inferior lateral to median loop, in which the twist has been made. With these heavy traction wires firmly fastened from each side of jaw with teeth in normal contact, there is little likelihood of any kind of motion between either the fragments or the jaws.

Thus we have absolute fixation and immobilization exemplified in one operation of two stages.

It usually becomes necessary to tighten the wires after the second day. This is readily accomplished by simply turning an angle with narrow-beaked flat-nose pliers in each long stretch of each traction wire, thus taking up the slack which may be caused by loosening lateral anchorages, from inflammatory processes or by the stress of traction on the respective teeth. This tightening can be done every few days, as required, until the angle thus formed may be turned so far as to produce the letter Z. It seldom reaches this point, however, if care is exercised in keeping wires straight between loops and taut at each, when they are first applied.

Should a wire break or become ineffective from being stretched, a very firm occipitomental bandage is applied and both traction wires cut and removed. The anchorage loops are now tightened and the new traction wires applied as before.

In cases in which the teeth are irregular or crowded too close together to permit the insertion of wires between them, an opening is made through soft tissues and alveolar process about one-eighth of an inch below its superior border and between the roots of teeth. This is done by quickly forcing a rapidly revolving Peeso reamer through at the point desired, and is usually accompanied by very little pain and slight hemorrhage. The subsequent tight pressure of wires on these soft tissues requires no other attention than the maintenance of cleanliness, as the position of wire is accommodated and the pain is negligible. In severe cases, in which a general anesthetic is required, the whole operation above outlined should be completed except the insertion of traction wires. These should not be introduced until the next day, after the fear of nausea or vomiting has passed. Even then it is well to leave a small pair of wire-cutting shears with the attendant, with instructions how and when to use them should such interference be necessary.

With this means of securing durable fixation and thorough immobilization, the physiologic function of reuniting takes place readily and rapidly.

The patient is fed on liquid diet, consisting of broth, thin gruel, milk, custards, etc., every two hours, with egg-nog three times a day, taking it through a rubber tube which may enter the mouth either through an existing vacuity or by being forced back through the post-dental space.

The patient rarely experiences pain after forty-eight hours, and if the usual instructions in regard to rest, nourishment and oral hygiene are followed the wires may be removed during the latter part of the third week, a firm occipitomental bandage being substituted for them for several days following. In removing the appliances, the traction wires are first cut and slipped out, leaving all anchorage loops *in situ* for subsequent use should it become necessary, for any reason, to fasten up the jaws again. When everything is finally removed the teeth, mouth, tongue and gums should be thoroughly cleansed and the patient instructed in the discriminate use of the jaw for a period of several weeks.

With some nervous patients having a hysterical tendency, it is good practice to supplement this wiring process by adjusting one of the many forms of occipitomental bandages—this as much for the psychic effect on the patient as for any mechanical assistance rendered.

Hot antiseptic mouth-washes should be used five or six times daily and all the loops, wires, teeth, gums and mucous surfaces thoroughly swabbed with a 50 per cent. solution of hydrogen dioxide at least once a day, followed by the hot antiseptic solution.

ABSTRACT OF DISCUSSION.

Dr. M. I. Schamberg, New York: In treatment of fractures of the jaw, we are not always able to employ anything which depends on the occlusion of the teeth, because in some cases the teeth are absent, but when there are a sufficient number of teeth to use one jaw to splint the other, I think it is the ideal method of treatment. I do not altogether agree with Dr. Oliver that so elaborate a method of wiring is essential, as I have achieved good results from the use of very simple methods. That is, taking ordinary brass wire, passing it between the teeth, and bringing it up taut as for the retention of a rubber dam. I do this in several parts of the mouth, thus supporting the lower jaw. I frequently find it necessary to run these wires in various directions to maintain proper traction. In dealing with these fractures, owing to the fact that many of them reach us after the patient has gone through other hands and reduction has not been complete or has not been maintained, I have found it necessary to pass the wire through the inter-dental space between the bicuspid of one side and create traction forward by means of this by an assistant while the jaws are brought into position. I believe that the method outlined by Dr. Oliver is a valuable one, particularly because it gives the part absolute physiologic rest. It seems to me unreasonable to expect good results with the use of splints which permit the patient to masticate during repair. A patient can live for many weeks on liquid nourishment.

Dr. J. E. Power, Providence, R. I.: I agree with Dr. Schamberg that the more simple methods of using wire have given excellent results. I cannot, however, agree with either Dr. Schamberg or Dr. Oliver in the recommendation of any appliance that will cause absolute fixation of the upper and lower jaws. I believe that it is unfair to incapacitate the patient if the fracture can be treated in any other way. Dr. Oliver describes in his paper the method which I have used in what is known as "first aid to the injured"—not, however, with the exacting technic or elaboration which he has demonstrated here. In fractures such as Dr. Oliver has described I first get an impression of both the upper and lower jaws, then I make plaster models, sawing the model through the lines corresponding to the lines of fracture. I then reconstruct the model, first getting normal occlusion, with the opposite jaw. A die and counter die are then made and a metallic splint is swaged (preferably of aluminum) to fit over the teeth on the reconstructed model. The time consumed is not much more than one hour, and the operator may have the prosthetic assistant attend to the making of the splint. If the model has been properly reconstructed according to recognized anatomic lines, the splint can be easily adjusted. Its advantage is that the appliance does not incapacitate the individual in any way, and it does not interfere with the natural method of feeding. Three or four hours after the splint is adjusted the patient can go on with his regular work, without any inconvenience. Dr. Schamberg places great stress on physiologic rest. If the cardinal principle of surgery is rest, then we bring it about in the case of fracture, by fixation. If there is a fracture through the bicuspid region such as the one described by Dr. Oliver, and the fragments are brought together and held in position by a metallic splint, the parts are given physiologic rest. Physiologic rest does not mean absolute rest of the whole oral cavity and its appendages, if only one of the bones is fractured. This is demonstrated in the general practice of surgery. If a fractured limb is subjected to absolute rest for a long period, there will be muscular atrophy; this is guarded against by the general surgeon through the medium of massage of the parts involved. If this great law of use and disuse applies to a limb, it is reasonable to believe that other parts of the body will be likewise affected. I claim, therefore, that it is an advantage to overcome this tendency to muscular atrophy, by allowing the patient to use his jaws and by holding the fragments in position with the splint which I have described, whereby the proper amount of physiologic rest is applied to the proper area. I think that absolute rest of the jaw which is not affected, as well as of the affected one in uniting them by any method which will impair their normal action is a disadvantage both to the process of repair and to the comfort of the patient.

Dr. George V. I. Brown, Milwaukee: There are many conditions under which we have to care for fracture of the jaw; therefore, we need many appliances and different forms of treatment. Dr. Oliver offers his method as one kind of treatment and would, no doubt, make distinction in the treatment of other cases. He has given a method of wiring the jaws which is undoubtedly one that would give absolute immobility and is free from the disadvantage of silver wire, which I think a very important improvement. I abandoned silver wire some time ago, because it is not trustworthy. There are a few principles in the treatment of fracture which I try to keep in mind. One is, I never fix the jaws immovably unless I know that I am obliged to. There are many reasons for this: one Dr. Oliver himself called attention to—in case of vomiting this is sometimes a very serious condition.

Dr. M. L. Rhein, New York: What other objections to immobilization have you?

Dr. Brown: None to immobilization of the fractured bone, but much to fastening the two jaws immovably in contact with each other. One is vomiting. Again there may be septic infection. If it be a comminuted fracture there are apt to be sequestra of bone coming away, and in these, as with other cases, it is important to be able to get into the mouth and keep it clean. Again, there is the question of food and nourishment. Or, there may be other injuries which make jaw fixation inadvisable.

Dr. M. L. Rhein. New York: I agree with Dr. Brown on the presentation of Dr. Oliver's improved method, and I want to emphasize strongly one of Dr. Brown's points, and that is the ultimate method of immobilization. It is often important to delay to some extent in the manner described. If there are any sequestra of bone in the fracture it is important that they should be thoroughly diagnosed as early as possible. I have a number of such cases that have slipped by the hands of surgeons without such a diagnosis having been made, necessitating a subsequent operation on the mandible. At present, with the aid of the X-ray, it seems impossible to make such an error, and I think this is another instance in which the value of the radiograph when it is obtainable is of great importance in determining the absolute line of fracture, as it will also readily show whether or not there are any comminuted pieces of bone necessitating operative interference before any form of immobilization is permanently used.

Dr. W. C. Fisher, New York: I think that there is one class of cases in which Dr. Oliver's method is very applicable; those that might be termed vicious. Patients who are in the habit of taking intoxicants, sometimes become very unmanageable and tear off the splints, and in such cases this method would be most desirable. I recall the case of a patient with a fractured mandible, acquired in a drunken row. After having an interdental splint in place for about a week, he became so crazy for a drink he went to a saloon and tore off the splint in order to drink. It was necessary to wire his jaw. Some method such as described by Dr. Oliver would be far better than wiring the bone.

Dr. M. I. Schamberg, New York: We have overlooked the fact that this form of treatment is applicable to all forms of fracture at or above the angle of the jaw to much better advantage than any splint which enters the mouth. Anything which tends to distend the mouth or which depends on the adjustment of a splint is not serviceable in cases of fracture at the angle or above the angle. When the fracture is at the neck or about the head of the condyle I believe that the wires should be so placed that there can be passive motion at proper intervals.

Dr. Stewart L. McCurdy, Pittsburg, Pa.: Without referring particularly to the method, it appears to me to conform in some respects to that suggested by Angle, except that he applies bands instead of wires in order to secure replacement of bones. I desire to make two points. I use iron wire. I have taken X-ray photographs of these iron sutures year after year during the last eight years, and find that the iron eventually becomes disintegrated and entirely disappears, so that it is harmless so far as its action on the tissues is concerned. As to the adjustment of the bone itself, being a general surgeon, I use the means at my command, just as the dentist uses the means at his command. I use the through-and-through method of wiring in all these cases. Several years ago I reported 18 or 20 cases in which this method had been used.

Dr. R. T. Oliver, West Point, N. Y.: While I do not claim that this method of treating fractures will successfully meet the requirements in every case, yet I think its application in general will come nearer being the correct treatment for more cases of fractured jaws than any other one method. Neither this method nor any other can be hailed as the universal one for all classes of cases. I merely attempt to portray a method of treating mandibular fractures, in which I bring out an original scheme of securing absolute immobilization by a process of wiring. I prefer the word adjustment instead of reduction in speaking of fractures of the jaw. We reduce luxations but really do not reduce fractures. I am not trying to change the nomenclature of surgery but this is the way it appears to me. Some one suggested that the question of occlusion or the articular plane could be dispensed with, in favor of some other things of greater importance. I want to say most emphatically that the most important thing in treating jaw fractures is to restore occlusion and reproduce the function of mastication. Even deformity must take second place to impaired function. This is especially true in the army, where the soldier's physical fitness and military efficiency is to a great extent dependent on his ability to masticate his food thoroughly in preparation for the process of digestion and assimilation, in order that his full physiological powers may be maintained. His personal appearance counts for naught. Of course there are a few cases in which impaired functions and deformity cannot be restored together, but if it comes to a question of one or the other, it certainly is for the best interest of the patient that his ability to masticate receives attention first. I believe that both anatomic and physiologic rest are essential in these cases. The earlier we can operate and get the end of the fragments together, thus facilitating the initial processes of callus formation, the quicker and less troublesome will be the cure.

The remarks of Dr. Schamberg in regard to the continuation of the old method of wiring, are rather surprising. I presume he refers to the method of using small gauge silver wire by the figure-of-eight method or some modification of it. I have used and seen it used by able surgeons, many times, and its reliability in these cases is always questionable. The failures to maintain fixation and immobilization are not through technic, but through fault of the wire itself; generally it is too small and too ductile to withstand the stress of tension. In the methods spoken of by Dr. McCurdy, I believe there will be extensive oxidation of the wire used, with more or less permanent stain of the tissues and a marked metallic taste complained of by the patient.

The method I have described was developed during my service in the Philippine Islands and is the result of a gradual evolution of experimental wiring in these cases. During the early days of foreign service, before the department furnished adequate equipment, many makeshifts had to be utilized. On one occasion, I was called hurriedly to one of the reserve hospitals in Manila to attend a case of multiple compound fracture of the mandible. The man had been thrown and stepped on by his horse and was in such pain, with profuse hemorrhage, that an immediate operation was necessary. Previously I had always used silver wire—the Fleurs sutures—but there were none available at that hospital and as an expedient an orderly was sent with a note to a nearby Signal Corps station requesting some 20 gauge wire. He returned with a big roll of copper, field telephone wire, from which I burned the insulation. After annealing and sterilizing, this was used and proved so efficacious and superior to the silver wire in being tougher, less ductile and possessing greater stability of the twists, that it has been used ever since.

Some one referred to the use of modeling compound. This material has proved useful in emergencies, and first-aid treatment, but I do not wish to discuss its possibilities at present as it will be covered in another article now under way.

WILL GOLD AND PORCELAIN INLAYS REPLACE GOLD AND AMALGAM FILLINGS?*

By Charles P. Pruyn, M. D., D. D. S., Chicago, Ill.

THE title of this paper being in the form of an interrogative presupposes a possibility of either an affirmative or a negative reply, according to the experience or the belief of the one interrogated.

From the fine gold foil manipulator of many years' experience who has a delicate finger touch and has inserted gold fillings for twenty-five to forty years that are still standing as monuments of his digital ability to save teeth by this method, we naturally expect a strong negative reply.

From the poor, or even average operator, we expect an affirmative reply, or a reply that will admit of a possibility that inlays may take the place of malleted foil fillings.

Then, when we come to the question of amalgams, the inlay enthusiast, as well as the pseudo-enthusiast, will say at once there is no comparison at all between the results of the two materials and methods. I think nearly all dentists admit the field of the porcelain inlay is limited to those places where esthetic effects are to be considered, rather than to the whole range of cases where teeth require filling. In my own practice it is a very common thing to see both gold and amalgam fillings which I inserted twenty, twenty-five, thirty and even thirty-five years ago, that are still looking well and doing good service; and I predict that my successors twenty-five or thirty years hence, will not find as large a percentage of inlays that I am now inserting, as I now find of the gold and amalgam that I inserted a corresponding number of years ago. Of course, I am willing to admit we still have something to learn about inlay cavity preparation, and that some of our failures in the use of the inlay are the result of faulty manipulation, and that time and more extensive experience will remedy some of our faults; but even then, can we reasonably expect that a thin film of a sticky substance composed of a soluble and an insoluble mixed together can produce a material that will be insoluble in the fluids of the mouth, and cementing two unlike substances together for the ordinary mastication, to last many years.

---

*Read before the Ohio State Dental Society, 1909.

I am aware, inlay making is very much easier for the patient as well as for the dentist, and I am aware also of the very beautiful jewelry effect of the mammoth gold inlay; but please do not let us deceive ourselves in our over-exuberant joy at these marvelous demonstrations of our ability to cast gold, and forget there is a mechanical limit to what can be done in the restoration of tooth forms. We all realize that personal equation plays a very important part in dental operations, and that under the same conditions one operator makes operations that last almost indefinitely, while another one's work will be a failure from the start. Therefore, it behooves us in our studies of the use of methods, and materials, to endeavor to be large-minded enough to study the underlying principles of the different methods suggested rather than to confine ourselves to a few cases in practice. Some statisticians inform us the average life of a gold filling is less than five years. If that is so, we are not doing what the public expect us, or what we are paid for. Personally, I hope the above statement of the average life tenure of gold fillings is overdrawn, but upon more mature thought I am inclined to believe the report true, and if true, what a sad reflection it is upon the profession we represent. For a number of years past I have been a member of the Illinois State Board of Dental Examiners, and have examined several hundred men coming to us from possibly twenty-five or thirty different colleges, and most of them recent graduates, but some of them of several years' experience and practice, and the most of them seem to be very deficient in digital ability to properly perform the usual filling operations. Those from the western schools were fairly familiar with the term "extension for prevention", while those from the Eastern schools were lamentably ignorant of the meaning of that term, as thin, overhanging walls of enamel were left in most cases, and defective fissures and sulci were rarely opened up and cut out. The graduates of the Western schools in some instances extended too far, while the Eastern school graduates made no extension whatever, but would simply cut out most of the decay, and immediately proceed to fill. In our work as State Examiners we found another grave fault, where both Eastern and Western men alike were deficient; that is, in the knowledge of the application of force in condensing gold. It seems hard to get the average man to understand that to get the best results in packing gold the force exerted, and the force applied, should be on the same plane. Also that to produce an air and water-tight plug, the gold must be driven in the direction in which we wish it to go. As an illustration of what I have in mind, I will cite a very familiar example, as follows:

The operator standing on the right side of the chair, packing gold into a simple occlusal cavity in the right lower molar, the gold would be fairly condensed against the distal and lingual walls, while the walls nearest himself, namely, the buccal and mesial walls, were so poorly covered with gold that an explorer was not necessary to reveal the faulty work, the operator seemingly forgetting to reverse the direction of the plugger, so as to pack the gold against the buccal and mesial walls. Such gross ignorance, or carelessness in filling teeth is simply inexcusable.

Of course, I realize all dentists cannot become expert operators, but all can, and should, become fair operators, and none be guilty of such mistakes as those mentioned.

At this point let me draw your attention to the one supreme axiom which governs the conditions of a filling, namely, that the weakest point of the filling is that part which is directed toward the operator. Unless direct access can be obtained to a cavity, it seems the height of folly to attempt to fill it with a malleted gold foil filling. However, in most cases of extensive decay in molars, and bicuspids, it has been my practice for many years to fill the distal and disto-occlusal surfaces with amalgam, and at a subsequent sitting to fill the mesial and mesio-occlusal surfaces with gold, thus having the two metals in complete apposition in the same tooth. The result will be a short-circuiting of the two metals, and their chemical affinities satisfied, and a peculiar oxidation of the baser metal with a bright surface of the gold. Also a peculiar molecular change takes place in amalgam, whereby its edge strength is greatly increased, and the changes of either expansion or contraction greatly minimized. Also a something results that is inimical to the growth of pathogenic microbic life. And teeth that are filled in this manner last longer than if filled with either amalgam, or gold alone.

After an experience of thirty-five years in this kind of work, I do not hesitate to recommend it as the very best practice in the kind of cases mentioned, but to get satisfactory results the cavity preparation must be made according to the indications for the material used. That is, there should be no beveled cavity edges for the amalgam to lap over, as amalgam will not tolerate an attenuated edge. As is well known, thin amalgam edges will crumble under the stress of mastication, leaving cracks and crevices, as a nidus for future decay. Good square walls should be left for the amalgam to be packed against; then sufficient care should be taken to pack the amalgam thoroughly, and with as dry a mix as can be used to make a homogeneous mass. If the mass is too soft, the edge strength will be correspondingly weakened, and if too hard and dry a homogeneous mass will not result. To show how difficult it is to make a good amalgam filling, a simple experiment can be made as follows: Take a little glass medicine or julep tube, about the size of a small lead pencil, and about a quarter of an inch long, and attach it to a slate or a piece of board with gum shellac; then with a piece of paper surrounding the tube so as to hide the work as it progresses, proceed to fill as if it were a cavity in a tooth. Then remove the paper and observe the spaces that are left between the amalgam and walls of the tube. Then fill another tube without the paper covering and through the glass walls watch every step of the operation and see how very difficult it is to obliterate all the air spaces, and get the amalgam in complete apposition with all the walls of the tube.

This experiment can be conducted so easily and cheaply and is such an eye-opener to an honest seeker after truth, that I advise all my dentist friends to try it before inserting another amalgam filling in the mouth. It will demonstrate the fact that large pluggers nearly the size of the cavity cannot possibly do the work of properly packing the amalgam into the tooth. You cannot make a first-class amalgam filling by taking a packing instrument nearly the size of the cavity, and with one or two pushes fill the cavity, as it takes time to put in a good amalgam filling. Take small quantities of the material at a time, and use small instruments at first; then by rotary movement and direct thrusts get the amalgam in complete contact with the walls of the cavity.

It is well known that gold will stand an attenuated edge; therefore, cavity preparation for gold may differ from that of amalgam in that one particular; otherwise, very much the same. If cavity walls are not left with edges in accordance with knowledge of the form and shape of the enamel rods, and a practical experience of enamel cleavage, failure will result, whatever material is used to stop the carious cavity; and if the interproximal space is not properly restored, failure of the whole operation may be expected.

One of my old professors in the medical school used to teach us that in the treatment of all diseased conditions there were three cardinal points to be observed, namely, the condition of the part, the condition of the blood and the condition of the nervous system; and upon a knowledge of these three depended a true diagnosis and prognosis. From a dental standpoint, I would add to the above another combination of three subjects, by a true working knowledge of the laws relating to histology, physiology, and pathology, of the teeth and surrounding parts. By a working knowledge I mean something more than an intellectual concept of the subjects mentioned. For of what value is it to our patients that we have a knowledge of the minute anatomy of the teeth, unless that knowledge is put into practice in cavity preparation? Why spend so much time learning the form, shape, and arrangement of the enamel rods, unless we avail ourselves of that knowledge in so shaping cavities that the laws relating to enamel cleavage will be observed? The same explanation will hold good as to the two other subjects just mentioned; as unless the interproximal spaces are restored to their normal form, shape, and function, it matters not how well the filling or inlay work is done, the case will result in failure. One of the great objections to the universal use of the inlay is the unwarranted sacrifice of good healthy tooth substance, as the cavities must be so shaped that the matrix, or impression, or wax model, may draw, or be easily released from the surrounding cavity walls. I know of some dentists who are supposed to be conducting a private practice, but in reality are running an inlay factory, and are very successful financially, whose methods are as follows:

First, relegate the gold pluggers to an unused shelf in the laboratory. Then open all cavities with chisels and burs. Next use stones of various sizes to shape up the cavities, and grind, and grind, until large open-shaped cavities are formed. Then take an impression and bite in compound, and send it to the laboratory, where girls are employed to complete the work and return it to the operating room ready to set. Of course, there is an enormous, needless destruction of tooth substance, but the innocent victims are not aware of the irreparable injury done to their priceless jewels until some time later. This method seems to please the patient at the time of the operation, and has proven very remunerative to the merchant dentist. If this inlay craze continues very much longer, the making of beautiful serviceable gold fillings will soon be one of the lost arts. The official position I occupy as a State Dental Examiner gives me an opportunity to keep tab, as it is known in common parlance, upon the pulse of what is going on in dental educational matters. During the last two years there has been a noticeable retrograde movement in the operative ability of the candidates before the Illinois State Board of Dental Examiners, and from all we can learn of the causes contributary thereto, it seems that too much attention has been given to inlays, and not enough to the making of gold fillings. From our limited experience with the cemented inlay, are we justified at present in saying that the days of the gold filling are rapidy passing and will soon be obsolete?

In conclusion, after having presented to you these brief arguments upon this interesting subject, allow me to say that in my opinion the inlay principle of using a soluble cement as a method of sticking gold or porcelain in the cavity of a tooth will never permanently replace good gold fillings.

DISCUSSION.

MARCUS L. WARD, Ann Arbor, Mich.: It affords me a great deal of pleasure to open this discussion for two or three reasons: the first reason is, I am a great admirer of Dr. Pruyn; and the second place, he always stands for good judgment, and is one of the very best men in Chicago so far as conservatism is concerned. It is a great city for new things and fads, but they have a few men who stand for conservatism. And the doctor's paper is very characteristic of the man, and it stands for conservatism. He wants them to stick to the good things and things which he knows can be done. He is a little pessimistic and wonders whether the next fellow is going to find as many inlays as he already finds of his gold fillings. If he will use the same care in placing that inlay to see that there is a good sized step or equal retention with pins for every inlay he puts in there will undoubtedly be some there in twenty-five or thirty years. He speaks of the porcelain inlay being limited to places where the esthetic effect is paramount and that the personal equation plays an important part. I think that on the former we all agree, and that the second is largely true. I know of two practices where porcelain plays a large part because the people have been educated to it. They don't care especially whether they stand or not. They may have to be replaced once in every two or three years but they don't seem to care. Now, there are a great many practices where the porcelain inlay will not do at all, except in places where it is a matter of esthetic effect. The same is true with other lines of work as we all know.

He emphasizes the observation he has made of state boards in regard to the extension for prevention, and the difference between the eastern and the western schools. That is probably a matter of quite common knowledge, that some of the western schools have had a craze for extension for prevention. Now, inlays have done this much for us; they have taught us to extend our cavities where the average person can reach the margins with a tooth brush. The men who have heretofore been successful gold and amalgam operators have been driven to extend their cavities to a point where they could draw their matrix or wax and they have unquestionably done better gold and amalgam operations since. Dentistry has been improved by the inlays in this respect. The doctor emphasizes emphatically the necessity for restoring the interproximal space. This is one other thing I think we have been able to do better with inlays than we did before; at least it has been so in my hands and in some others that I have seen work. In the first place, men have had to get separation before they construct their inlays. Some of the poorest dentistry has been done by inserting gold fillings with a matrix and not restoring the proximal space. I think we have improved a great deal with the restoration of broad proximal contact with the use of inlays. He emphasizes also the necessity of sticking to gold fillings and amalgam fillings because the craze is carrying us away from the necessity of getting down to hard work. Now just a little example of what occurred in our school last year. I asked two members of the State Board of Dental Examiners what percent of the total operations should be done in inlays, and after some discussion we thought twenty per cent. of the operations of the seniors should be inlays of one sort or another. We started in to carry that out and before we got half way through the year the students got so crazy we had to stop it and fall back on about five per cent., and we will probably never go beyond five or six per cent. for the reason that they get so crazy over it; they don't want to get down to learning gold fillings and amalgam fillings.

The doctor also emphasizes the fact that you cannot pack amalgam well nor pack it easily unless you have had a great deal of practice under conditions which will enable you to see your results perfectly.

Now, if any of you want to try your hand at it, I have a little clinic tomorrow morning which will emphasize what he said.

I cannot agree with Dr. Pruyn on the importance of apposition of two metals. He places a great deal of importance upon the chemical change as well as the physical change which takes place between the amalgam filling in the distal part and the gold filling which is in the mesial part of the molar. He assumes that there is a minimum of contraction and expansion, that the chemical affinities of the two were not satisfied, that the baser metal is oxidized and the strength is increased. I know very well Dr. Pruyn is a first-class operator; YOU all know that; in fact, there is no doubt about it. For this reason alone I cannot take his observation in his own practice as an evidence that all amalgam is benefited by the presence of gold; it may be true in certain cases. If a man had an excess of mercury in his filling, he would take out some of this excess of mercury from some alloys by having gold in apposition with it. Now, by taking out this excess of mercury from this amalgam filling, he has limited the change somewhat. This might possibly account for his results with the use of certain alloys, but we do not know what alloy he uses so we must conclude that galvanic disturbances aid in forming metallic salts which are admittedly a bar to the progress of caries. We have no laboratory proof that anything will prevent shrinkage or prevent expansion outside of the annealing of the alloy, the composition of it, the casting of it, and possibly the cutting of it. The passage of the electric current has not been demonstrated to prove that. But I can see how the doctor might have had some beneficial effects by taking out the excess of the mercury into his gold or by changing the amalgam into metallic salts. Now, as to the baser metal being oxidized, I cannot see how it could occur in all mouths. Those who have worked on the analysis of the mouth at present have observed that no two salivas are alike, and that no one's saliva is alike at all times. For example, a saliva which has from one to five hundred lactic acid in it today may dissolve cement, but tomorrow it may still have from one to five hundred lactic acid, but it does not dissolve cement. Why? We don't exactly know, but we attribute it to the restraining influence of the saliva upon certain things. So that what has occurred in one mouth and upon one filling, I cannot see how it would occur upon them all, and if it is the reason for one, it ought to be the reason for all of them; and I cannot take it that way.

The doctor has emphasized finally the benefits derived from the use of the large inlay over those of the small inlay. I agree with him most heartily that the smaller fillings are better done, all things considered, with the gold fillings, than with inlays. It is in the large cavities that we need them, particularly where the walls need to be bolstered up with the adhesive properties of cement, while in the small cavities we do not necessarily need the cement.

L. E. CUSTER, A. M., D. D. S., Dayton, O.: The paper of Dr. Pruyn is very apropos at just this era in dentistry. Three years have now passed since the cast gold inlay came into use, but our knowledge of the cemented filling dates back at least twenty-five years. In that time we have learned a few things which if we would heed them will set us a long way ahead in the proper and ultimate placing of the porcelain and gold inlay in its proper sphere in conservative dentistry. While personally I have always been early in investigating new methods and ideas it cannot be said that I have gone to extremes in their use in practice at any time. It would be supposed that as the inventor of the first electric oven I would have become a porcelain enthusiast, but records show that I also devised the first electric gold annealer for the best annealing of gold for a good gold filling and also immediately following Dr. Taggart was the very first to devise another method of casting gold. From this you may rightly expect that Dr. Pruyn's question will not be answered with very sharp difference of opinion.

He does not place very much of weight upon the permanence and adhesive property of the cement. In this I agree with him, when an inlay is expected to be held in position purely by the adhesive property of the cement. Nearly all the failures of inlays that I have seen have been due to this cause—where all signs of mechanical locking are lost sight of. The adhesion of the cement to tooth substance can be increased, however, by wiping out the cavity with the liquid of the cement and drying a second time. This seems to give the surface an affinity for the cement.

While in a general way a cavity is prepared much the same for all inlays, yet there should be a marked difference, especially at the margins when preparing for a gold or porcelain inlay. This is based upon the marked difference in the physical qualities of gold and porcelain. Just as stated in the paper that amalgam will not tolerate a thin edge, the same is true of the porcelain inlay, and the margins should never be thin. When a gold inlay is used, however, the gold may be carried out quite thin and may even be used as a protection to a thin enamel margin.

The doctor outlines his method of treating large cavities in the posterior teeth by making an amalgam filling in the posterior half and a gold in the anterior portion. Now, prior to the advent of the Taggart cast gold inlay, I believe such a practice was the very best, all things considered; that such a filling aside from the great saving of time and pain, was just as good a saving agent in the tooth as an all gold filling. But today I believe in such a cavity, all things considered, a cast gold filling is indicated. It is here especially, that the cast gold filling has its greatest usefulness and in this instance the cast filling should always be used. Eight years ago I began the extensive use of large porcelain inlays in the third molars in cases where but little remained of the crown and where the stress of mastication was not too severe. It was in that class of cases which were regarded beyond judicious filling and which were in places so badly broken down under the gum margin that a crown was not even indicated. These were treated by forcing a cone of modeling compound into the cavity, removed and transferred to a laboratory process where a porcelain filling was made and this cemented in place. Eight years' observation of these cases has been sufficient to show such a treatment is good practice and now that we have the cast inlay so much more simple in its technic I am more than ever pleased with the results, and I feel that here, too, we must score one for the cast filling.

The doctor's observations as to the therapeutic value of combination fillings over single metals is interesting and yet I have no proof to offer refuting them. As a matter of fact it is well known that electrical disturbances are always at work where dissimilar metals are not only close together in a proper electrolyte, but even in actual contact, as for instance, the thermo-electric couple has two dissimilar metals closely united and yet a current is generated by unequal heating of the same. I would, for the above reasons, attribute these effects to the constant though very mild electrical disturbances due to the dissimilar metals.

The doctor says, "One of the great objections to the universal use of the inlay is the unwarranted sacrifice of good healthy tooth structure." This, if no other objection could be raised, is sufficient to place the inlay in its proper sphere. I cannot believe that however useful the inlay may be in large cavities it will ever be used as a universal filling, and while I acknowledge this I at the same time do not fear to state that the day of broken backs, of hours of malleting, of long engagements, has passed and we have taken a long stride toward humane dentistry and the large cavities are better treated with inlays than with a two hours' malleted filling.

The dentist will turn a more concentrated effort and at the same time a better service upon the management of the smaller cavities by the old method of malleted and hand pressure fillings. Dr. Pruyn need not fear that the dentist's skill will wane because of this, for it is the intricate cavities which we must still treat by the older method that require the most skill. I feel safe in saying that the enormous restorations of years ago were *feats of endurance rather than of skill.* The two hours of malleting gold in a large cavity represents largely a physical accomplishment, whereas the small fillings inconspicuously placed in the anterior teeth represent skill and these we must still use. The cast filling cannot replace these except in the hands of what he terms the "merchant" dentist.

In conclusion I would agree with the author that gold and porcelain inlays will not entirely replace gold and amalgam fillings, but in the hands of the conservative and humane dentist I predict that they will replace all that class of large fillings which formerly required over an hour for their insertion. They will save the third molars, which could not even be crowned, and they will to an astonishing extent, by reason of their being a support rather than a strain on a frail tooth, replace the gold crown.

DR. W. L. GARES, Columbus, O.: As the members have expressed themselves here this evening, I feel that there is not going to be any harm done in using inlays. We are supposed to be men of judgment, and know where to put those things.

What I want to speak of principally, is in regard to amalgam fillings. The doctor is right in regard to not packing an amalgam filling as it should be. One little incident that I remember which helped me out in that line, was an idea given by Dr. Bonwill about ten or fifteen years ago, probably. He gave a clinic of packing amalgam fillings, which was quite a fad with him. I didn't particularly like his way in some respects, but in regard to packing amalgam he surely had the right principle. He picked up a little piece of bibulous paper and said, "that is worth its weight in gold, if for nothing else than packing amalgam fillings; don't roll it in a hard pellet, but place in the cavity loosely and grasping with the pliers rotate in every direction; this action will form the paper into a hard ball and will force the amalgam into every recess of the cavity and force out all the excess of mercury; add more filling and repeat operation till cavity is full enough that a flat instrument can be used with force."

This method has proved most satisfactory to myself. Try it.

Dr. A. O. Ross, Columbus: I do not know that I can add very much to what has already been said. I thoroughly enjoyed Dr. Pruyn's paper. I am of the old school. I believe there is nothing so good as a well consolidated gold filling, and I always question as to whether I am not getting just a little lazy when I think of putting in a cast or any other inlay. I feel that inlays have their place; that there is a limit to the price that you can get for an operation, and the price that the patient pays. Money is not the only consideration. When a patient has sat in a chair for a number of hours to have a gold filling properly placed, his strength is exhausted, and when it comes to filling, it is an exhausting operation, both upon the patient and operator. Therefore I might say, put in a gold inlay because the price, the misery price paid is too great for a gold filling; but I always stick to the gold filling, unless the physical price is too great, and I believe that gold fillings, as a rule, last longer than inlays. My experience has been wherever cement has been used, you may expect that cement to dissolve. In watching my own inlays, while I have replaced but few, I notice the margins of some do not look right, and the percentage is greater than that of my gold fillings.

Dr. W. A. Price, Cleveland: When the president just asked me if I would speak on this subject, I said I thought there had been enough said; but if I did I would speak more strongly in favor of the gold inlays than most of you have done. I am going to ask Dr. Pruyn if he would object to the gold malleted filling being homogeneous? I believe he will say no. If you were to elaborate on that a moment, you would say that a malleted surface is a harder surface than the fused gold. Then after inserting the inlay we can burnish and make its surface just as hard as we can the malleted filling. I think you would grant, for all reasons whatsoever, it is no disadvantage to a gold filling to be homogeneous, in other words, being in the condition of fused gold as compared with malleted gold.

Another point, is it unreasonable to you that that same malleted filling which fits perfectly into the cavity would be any less advantageous to that tooth, provided that a non-conducting layer is under it, provided it does not come to the surface at any point. I think you will find it will not be any disadvantage to put cement under a gold filling of any kind. Now, another point, why are we so much in favor, as a rule, of the malleted filling? I think very largely because better margins are, as a rule, produced with the malleted fillings, and this because of the great care in finishing, and to the end that there be little opportunity for the recurrence of decay. Let us suppose that an inlay can be made with as perfect a margin and as invisible a margin, would you then admit that the inlay is as good, provided the cement does not come to the surface at any point? I believe you must admit it and I believe such margins can be made. I do not believe in putting in inlays everywhere, but I believe the time is coming if not here when the best operations made and the largest proportion of good operations will be gold inlays. Our technic for gold inlays is not perfected yet. Most operators depend on pure gold for anchorage in the step. Let us see how we can gain in maximum strength at this weakest point. We can put an iridio-platinum bar in the center of the inlay and step, in the same way that reinforced concrete is so strengthened that they can use it for bridges. In the malleted filling we have to cut a large step to get a mass of gold there. A smaller step so constructed with an inlay will be much stronger.

The perfectness of the finished operation is pretty nearly in proportion to the care and skill that the operator puts in it, and when these men that are doing these magnificent gold operations and that have taken so much skill will make a gold inlay of the best type, it will also be found in the teeth many years hence. It is not enough for us to build monuments that someone will say, "What a magnificent operator. See that beautiful filling that so-and-so put in?" If we put in one gold filling and it stays twenty-five years, and we so punish the patient that he or she will let half a dozen other teeth go, we fail, and I would rather that someone would say, "That filling only lasted fifteen years, but here are five others that stayed fifteen years." Professional success is not all a question of skill of the operator. We cannot rightly today take our little patients and put a rubber dam in their mouths and put in a malleted filling and give them a life-long dread of the dental chair and call it a successful operation, when we can put in gold inlays, which are better than the malleted fillings put in under such conditions, yes and very much better than gold fillings, because it does not punish them and prevent them from coming back for some other needed operation.

Dr. Clawson, Cincinnati: I have been interested in what has been said. These new fads, as we may call them, are all useful in their sphere. The thought that seems to come first is, "can we put an inlay in that cavity?" Now, let us put it differently, let us say, "would an inlay be better than any other method for this cavity?"

Dr. C. P. Pruyn, Chicago: In answering Dr. Ward, I would say that mercury evaporates at all temperatures, but the mercury that is in the amalgam fillings, if it is put in as I would recommend, and as it should be, would be so infinitesimal that it would have comparatively no effect upon the adjacent gold fillings. Gold and amalgam should be in complete apposition in the same tooth. They should be married as man and woman, and together form a new union, each one a complement of the other. That is the case with gold and amalgam when in absolute contact, and as a result of that marrying, their chemical affinities are satisfied, and a peculiar something results, which produces a new molecular condition of the amalgam, so that it is wonderfully strong, and also less liable to change of form.

The amalgam which is placed in the bottom of the glass tube, or in the beginning of the cavity that you fill with amalgam, should be a little softer than the succeeding pieces, then as you proceed to add more of the amalgam it should be quite fairly hard, so that rotary motion and direct pressure are necessary to make a homogeneous mass out of it. It takes time to do it, but the results justify the increased value of the filling as a tooth preservative. If in mixing the amalgam you have too soft a mixture, cut out some of it and throw it away, and then add more of the alloy to stiffen it up; never squeeze mercury out of the mass. If you do you will have a different thing than you think you have. No need of squeezing out the mercury as there should be no excess of mercury to squeeze out. *That's* the way to put in amalgam fillings, and with that method you can have just the results I have spoken of.

I am not surprised at the doctor's students going wild over inlay work, it is so interesting; no wonder the boys wanted to do nothing else.

Some one spoke of gold and tin. Tin, as a filling material, has not a superior in the whole range of filling materials. And why don't we use more of it? Simply because our patient will be told when he gets into another dental office, that he has been cheated, that we have put in something cheap, black and dirty down there. I am sorry that it is so. I have used considerable with my own children, however, and where I have had people under my own charge. Where I could, I have used it, and it has lasted very well, and I am justly pleased with the results, and where I have had people under my own control I have used it quite extensively.

Dr. ——: Couldn't the dentist explain to the patient the discoloration of the tin, but not necessarily the tooth?

Dr. Pruyn: But often after he has explained as thoroughly and honestly as he can, the patient gets into the hands of another man and he says, "this is a failure." We hope he does it honestly, through ignorance; but sometimes he doesn't; and he may do it with malice aforethought

Dr. Clawson spoke of the use of good judgment. Now, that is the point. There is a field for gold inlays, and there is a field for porcelain inlays; but when and where to use them requires good judgment, and good judgment does not always come from heredity, but from experience year after year.

THE ADVENTITIOUS EFFECT OF LARGE MASSES OF GOLD IN CONTACT WITH TOOTH TISSUES*

By I. N. Broomell, D. D. S., Philadelphia

EVER since the introduction of crown and bridge work into the dental profession there has been more or less discussion in regard to the deleterious effect of large masses of gold in contact or nearly in contact with vital tooth tissues. Some operators have contended that no bad results would follow such operations, while others have been equally confident that the good offices of the supporting teeth would be naturally interfered with by completely or partially boxing them in with gold.

The former class, true to their convictions, have not hesitated to attach large or small bridges to vital teeth either by partial or entire gold caps, while the latter class have invariably devitalized the pulp before performing similar operations.

Clinical experience in general in regard to the ultimate effect of these operations has been such that deductions widely at variance have been arrived at. We have all had cases in which the vitality of the pulp has been lost in the course of time, under partial or full gold caps; likewise we have also had many cases in which under similar conditions the pulps have remained *apparently* undisturbed. In view of what it is proposed to relate in this paper, the qualifying word in the foregoing sentence cannot be too forcibly emphasized, that is, the pulps are *apparently* undisturbed.

As a result of the microscopic study of a number of cases it is proposed to show that almost invariably the pulp tissue, and as well the enamel, dentin, and alveolo-dental membrane, are all more or less affected in various ways by such unnatural surroundings. Among the morbid effects produced are hyperemia of the pulp, dry gangrene of the pulp, calcification of the pulp tissue, sclerosis of the bloodvessels of the pulp, atrophy of the pulp, pulp nodules, secondary dentin, expansion of the dentinal tubules, with corresponding bulging of the dentinal fibers, pathologic pigmentation of the enamel and dentin, non-carious destruction of the enamel, as well as destruction by caries and perhaps a molecular change in this tissue. Any one of the foregoing may be the primary affection after which a train of pathologic conditions may ensue.

It is interesting to study these various pathologic changes as they take place in the tooth tissues, producing as they do a series of phenomena of both scientific and practical interest.

The first case to be investigated was that of a pin and plate bridge (Fig. 1), constructed after a somewhat peculiar fashion, the intervening tooth, or tooth of replacement, being the natural one which formerly occupied the space. The history of this case does not differ materially from many others under similar conditions, the left central being the first to

---

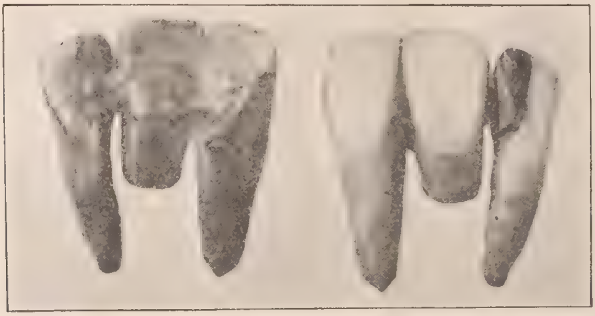
*Read before the Ohio State Dental Society, Dec., 1909.

The cuts to illustrate Dr. Broomell's article were loaned for this issue by the S. S. White Company.

yield to a pyorrheic affection, followed shortly by the shedding of the two adjoining teeth—those supporting the bridge—from the same cause.

Notwithstanding the fact that the bridge-piece was retained but a short time, it was present sufficiently long to materially affect through the rather extensive gold abutments the pulps and structural arrangement of the dentin.

Fig. 1.



Before introducing slides illustrative of pulp pathology, let us first examine the cellular elements of a normal pulp, a very good specimen of which is shown in Fig. 2. Characteristic of the normal tissue are the so-called round or pulp cells, retaining in a measure through health an almost embryonic simplicity, and occupying the center of the proto-plasm-like mass; then the single layer of specialized cells, the odontoblasts, with their processes reaching far out into the substance of the dentin as the dentinal fibers.

Fig. 2.

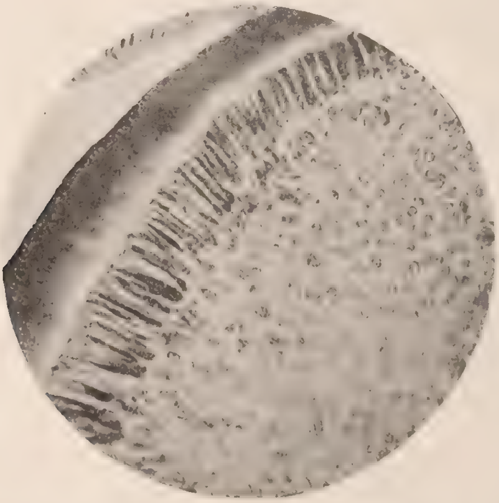


Fig. 3 shows a section of the pulp of the central incisor which supported the bridge-piece previously shown. An examination shows the pulp cells more or less atrophied and without form; the odontoblasts are closely packed together, and are in almost immediate contact with the calcified dentin, which is deeply pigmented, especially immediately beneath the surface used for attachment. Evidently the delicate pulp structure has made every effort to defend itself.

Fig. 3.

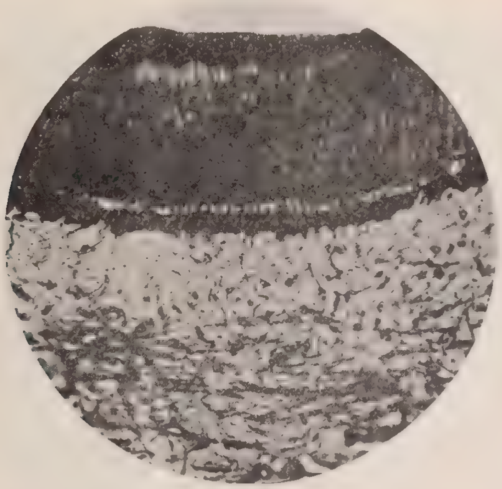


Fig. 4 shows a longitudinal section of the same pulp, and while this is under low power, its vascular supply is a pronounced feature. The vessels are dilated, denoting a chronic inflammation of the tissue, resulting no doubt from prolonged irritation through thermal stimulation.

Fig. 4.

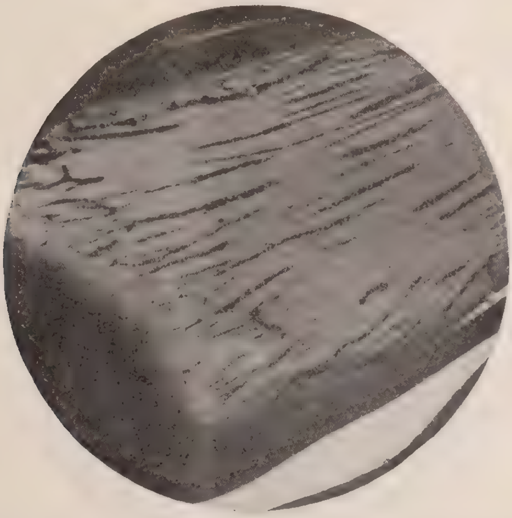


Fig. 5 shows some of the sclerotic vessels of the pulp in transverse section. Evidently an inflammation of the low grade has persisted in this pulp for some time, and with the atrophy of the cellular elements noted before there is a marked increase in its fibrous tissue.

While in this particular case the conducting substance was bulky and comparatively closely associated with the pulp, this is by no means an essential feature in producing a hyperemia, because in many instances similar results follow in relatively shallow cavities, through thermal irritation of the dentinal fibers. In fact, it may be a question whether or not this superficial irritation may not more frequently result in arterial hyperemia of the pulp on account of the more highly organized condition of the dentin at its periphery.

Fig. 5.

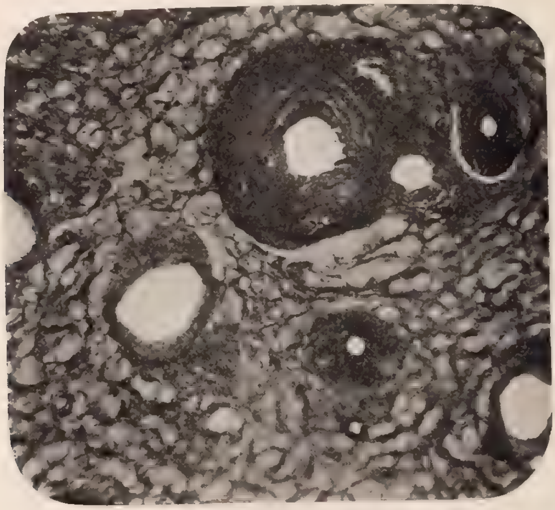


Fig. 6.

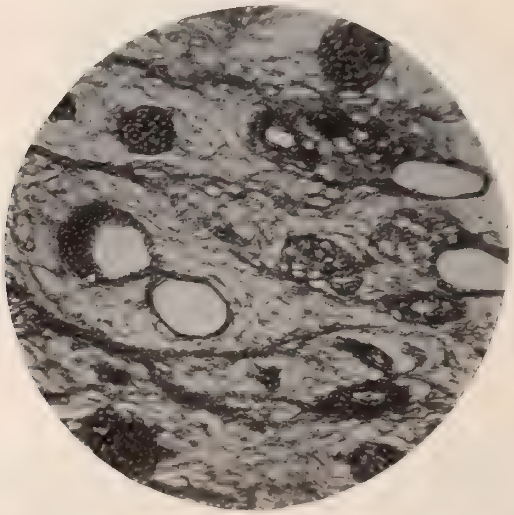


Fig. 6 shows a section of normal pulp-vessels. The cardinal principle in the treatment of all inflammatory affections of the pulp being first the removal of the exciting cause, in this instance, recalling the nature of the case, we could scarcely expect successful rational treatment. Instead of this the emergency could be fairly met with a devitalization of the pulp only, a procedure which could have been carried out to very much better advantage when the operation was first performed.

Fig. 7.

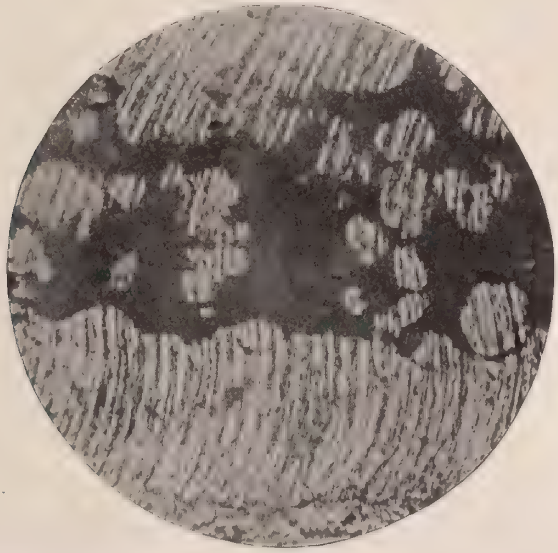
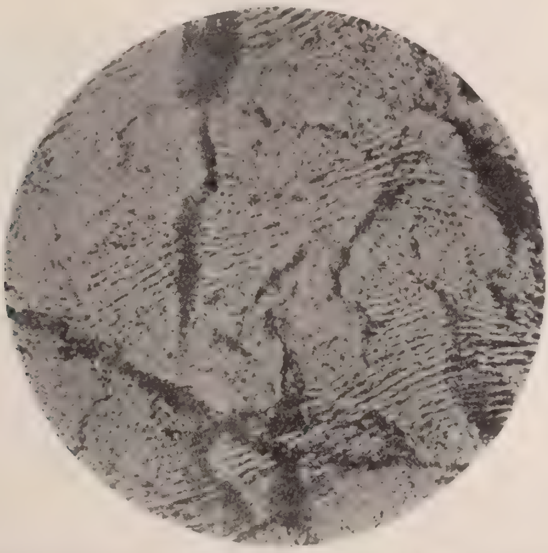


Fig. 8.



It so happened in this instance, as it does no doubt in the majority of similar cases, that the pulp congestion was accompanied with little or no pain. This fact does not preclude, but it actually favors, the possibility of the eventual death of the pulp, this taking place so gradually and so peacefully that a knowledge of its existence comes to light only with the beginning of suppuration. Not only were the pulps of these teeth affected, but the integrity of the dentin and enamel as well. While no history of syphilitic nature was to be found nor suspected, a great bulk of the dentin of one of these teeth (Fig. 7) had an appearance quite similar to syphilitic dentin, from the presence of numerous and particularly large interglobular spaces, common to dentin in this disease.

Fig. 9.

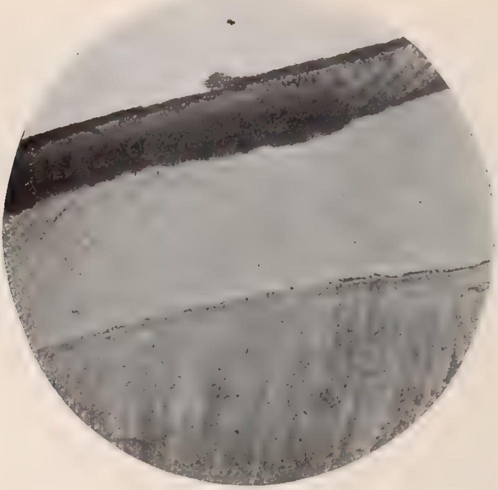
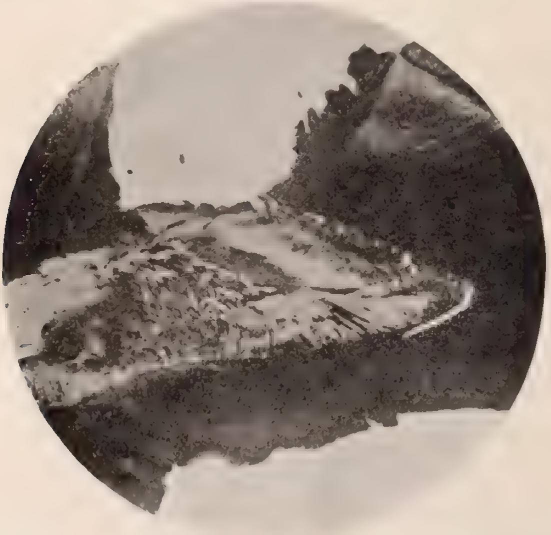


Fig. 10.



The extent to which the presence of these so-called interglobular spaces affects the structure of the dentin can only be approximated, but filled as they must be with a transitional or uncalcified substance, they invite the invasion of bacteria after these have once gained entrance into the tubuli.

An examination of the enamel of the tooth (Fig. 8) showed the presence of a general morbid affection, evidently acquired since the tissue had reached maturity. They are plainly evident lacuna-like spaces, quite similar to those found in acquired syphilitic enamel. Local conditions no doubt played an important part in the direct causation of these affected areas, which on account of the peculiar reddish-brown color cannot be considered caries.

Fig. 11.

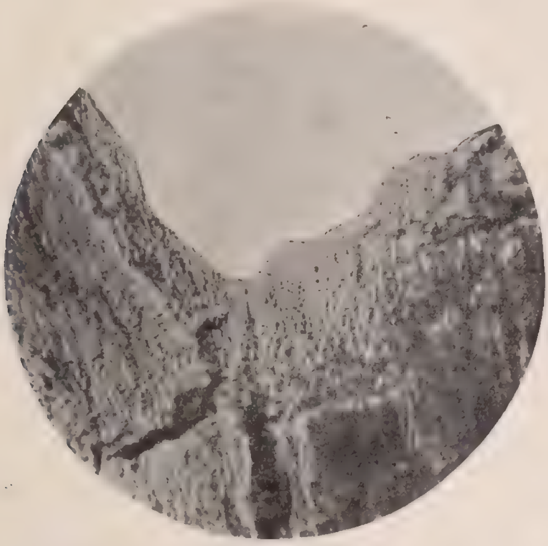
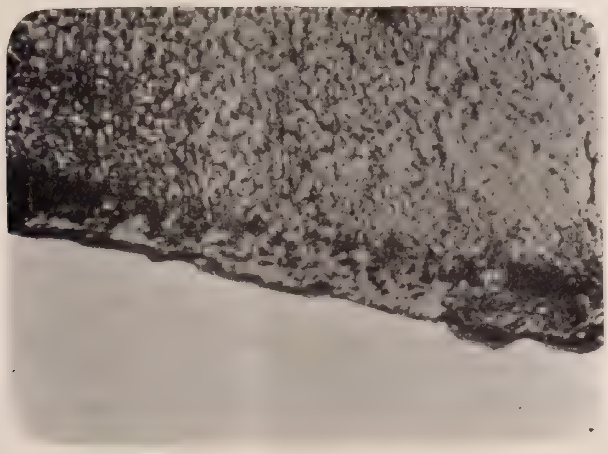


Fig. 12.



Thinking that some interest might be attached to the intervening natural tooth, which it will be recalled had been extracted, and swung in the space by cementing it to the gold backing, a ground section was made, which shows the dentin to be normal with practically no interglobular spaces. (Fig. 9). The enamel was also normal save for a peculiar greenish stain, which had penetrated its substance to the extent of about one-fourth of its entire thickness.

Fig. 10 shows a section of the crown of a cuspid which for several years carried a large gold filling on its distal and labial surfaces, as well as having its lingual surface covered with gold to prevent further destruction through mechanical abrasion, the tooth finally being extracted because of persistent and uncontrollable fistula.

The section here shown speaks for itself. There has evidently been a chronic suppurative pulp, followed by atrophy, and finally complete calcification of the tissue.

A thin section of the dentin of this tooth was examined after decalcification, and the microscope revealed adventitious dentin of a peculiar character. The dentinal fibers showed club-like enlargements, to accommodate which there must have been a corresponding increase in the diameter of the tubules, most likely a process of decalcification. Such a condition as this could readily be attributed to a prolonged inflammatory condition of the pulp through over-stimulation of its peripheral cells by the odontoblasts.

The next specimen (Fig. 11) is one which shows the possibility of the disintegration of enamel under a layer of zinc-phosphate cement, the section being made from a tooth which supported a bridge abutment. In lifting the bridge from the tooth there appeared to be no disintegration of the cement, the surface of the tooth supposedly being perfectly protected, and, therefore, free from the possibility of a breakdown. Perhaps most authorities would consider the destruction of enamel here shown to be a true carious process, but from its appearance under low as well as high power, it gives evidence of a simple destruction of the interprismatic substance, from the effects of which the enamel rods have fallen apart, a gradual destruction of tissue resulting. In Fig. 12. is additional evidence to the effect that the enamel is not always shielded from destructive influences when masses of gold are attached to it through the medium of a phosphate cement. This is a ground section from the crown of a bicuspid, the patient being but twenty-eight years of age. The gold crown had been in place only five years, and its removal from the tooth after extraction showed no evidence of the disintegration of the cement. In a very young tooth we might almost consider the affected area at the periphery of the enamel to be its transformed cortical layer, but not so in a tooth past maturity.

It is a generally accepted theory that while enamel may suffer through mechanical or chemical injury, it can undergo no constructive changes or retrograde metamorphosis. Under certain favorable conditions of environment a molecular change is possible, and is believed to be what has taken place in this and the previous case. It may be a question as to how destructive such a condition may eventually prove to be, but one thing is certain: sooner or later bacterial action will set in, followed by the usual disastrous results.

While it has been intimated that most pathic conditions in the tooth tissues through mechanical influences are slow and insidious, this by no means excludes the possibility of similar disturbances developing more or less rapidly, such acute results being shown in the following interesting case:

The patient was a woman about forty-five years of age, of highly nervous temperament, with teeth hypersensitive under normal conditions.

A gold crown was placed over a lower bicuspid, free from cavities of decay, requiring but little destruction of tissue before setting. Certainly there was no exposure of the terminal branches of the dentinal fibers. Within twenty-four hours marked symptoms of acute inflammation of the pulp appeared—so pronounced, in fact, that the crown had to be removed.

In ten days the crown was again placed in position with similar results, this time so severe that the patient had the tooth extracted.

An examination of the pulp (Fig. 13) showed a marked increase in the number as well as the size of the odontoblasts, characteristic of hyperemia and acute inflammatory conditions of the pulp. This increase in the number of creative cells no doubt results from a greater need for a more sustained and higher exercise of their functions, an attempt to shield the more delicate pulp tissue, not by a deposit of secondary dentin, but by creating physiologically a more concentrated area of trophic control. Evidently the pathic disturbance in this pulp was due to the thermal influence of the gold casting upon the terminal branches of the dentinal fibers, notwithstanding the fact that these were shielded by a layer of normal enamel. Another case, with a history quite similar to the one just described, also showed a marked disturbance of the odontoblastic layer..

Had these teeth been affected with caries, especially of the deep-seated variety, such a disturbance of the odontoblasts would naturally be expected, but being of normal size and without a break in their structure, the pronounced evidence of pulp inflammation and degeneration could only be accounted for through the fact that their normal environments had been interfered with by incasing them in caps of gold with a lining of zinc oxyphosphate. The odontoblasts had not only been numerically increased, but they had become profoundly modified, possessing many new characteristics, all indicative of hyperemia. The nuclei of the individual cells seemed almost to have left the cell body, and the cells themselves presented a broken-down, ragged appearance, denoting the beginning of atrophy.

One of the most probable pathologic effects resulting from the complete incasement of a living tooth by a metallic cap or box such as the modern shell crown, is that of dry gangrene of the pulp. While this condition is most frequently attributed to sudden external shocks, or to strangulation of the apical bloodvessels, similar pathology frequently follows shell crowning. All that seems to be essential to producing a dry gangrene of the pulp is, first, its death, then if bacteria and moisture are excluded the pulp will soon be transformed into a dry, structureless mass, more or less shrunken in bulk. (Fig. 14.) The pulp from which this section was made was that of a bicuspid which carried a gold crown. It showed every evidence both macroscopically and microscopically of dry gangrene. The pulp-cells proper have become multiplied to such an extent and their characteristics so modified that there is little evidence of true pulp tissue remaining. This tooth was without an antagonist, and no history of a

Fig. 13.

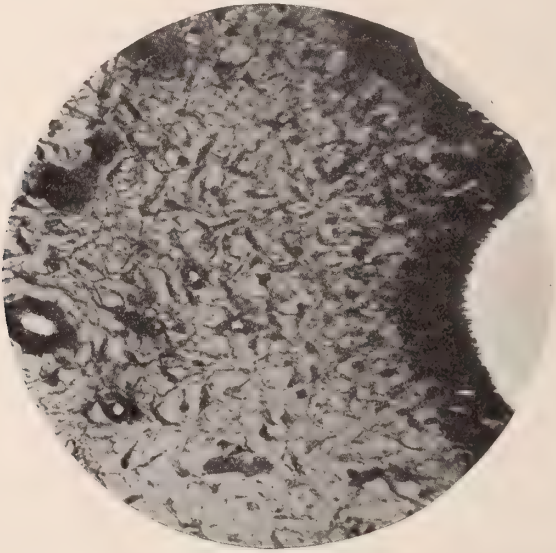
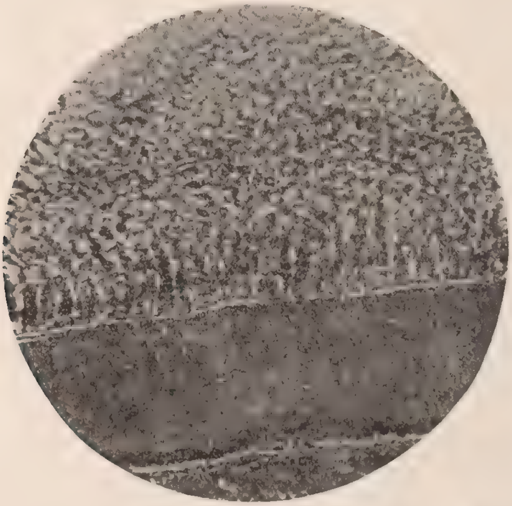
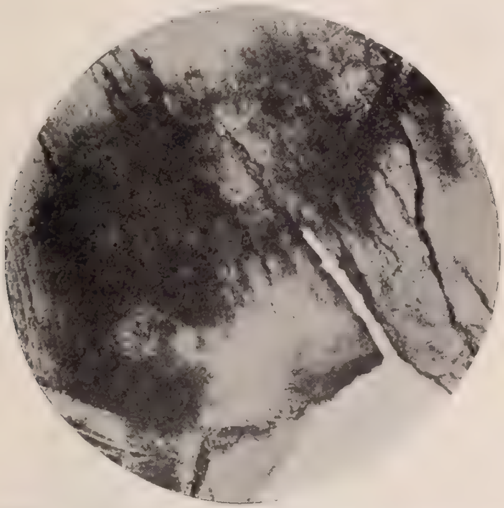


Fig. 14.



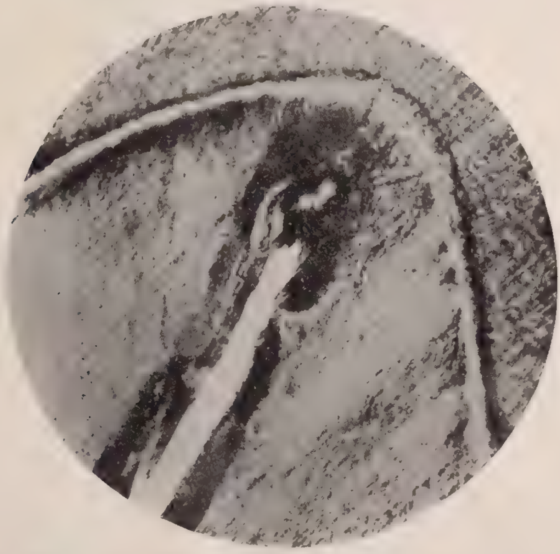
traumatic nature could be associated with it. The conclusion, therefore, is that the condition in the pulp cavity resulted from the presence of the gold crown.

Fig. 15.



An examination of the same pulp about midway between the crown and the root-apex showed a wonderful multiplication of cellular elements, with almost complete destruction of intercellular substance, the tissue being almost solidified.

Fig. 16.

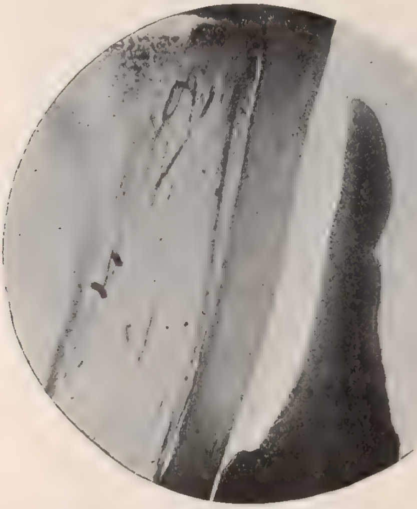


Of all the pathic conditions which may follow the boxing in of vital teeth, there are none so likely to occur as pathologic pigmentation. Two specimens of such an effect are here shown. The first one (Fig. 15) shows dentin thus pigmented through the presence of a gold lug which had been attached to the surface by a post implanted in the tissue, and the second (Fig. 16) shows a section through the enamel of a crown which had been used as a means of attachment by a similar method. While it may be argued that such pathologic discoloration may possess but little clinical significance, the writer claims it to be the first step toward a general structural breakdown.

PERIDENTAL AFFECTIONS.

While three classes of pericemental affections are recognized—(1) those which have their origin in the apical spaces, (2) those which begin at the gingival margin, and (3) those beginning between these points—two other important classifications must be admitted, septic and non-septic.

Fig. 17.



Those which result from carelessly fitted gold bands or caps can only be properly classified as primarily non-septic, and to originate at the gum margin. The resulting effects may to a great extent be said to be from mechanical causes first affecting the fibers of the dental ligament. While the loss of such teeth through lack of support is usually attributed to abuse or over-use, producing a general hyperemia, and finally, a well-established interstitial gingivitis, in all probability it is largely due principally to a traumatic disturbance of the fibers of the dental ligament. The chief function of this portion of the alveolo-dental membrane being to swing the tooth in its socket, and to right it when slightly turned upon itself through the normal or abnormal forces of mastication, any condition which disturbs its normality places an undue strain upon the principal fibers of the membrane, this being quickly followed by a passive dilatation of the peridental vessels, accompanied by a general breakdown of the tissue.

Fig. 17 shows a decalcified section of the crown of a tooth entirely deprived of its enamel in order to fit the crown. The gingivæ became first hypertrophied, followed by extensive absorption.

Fig. 18.

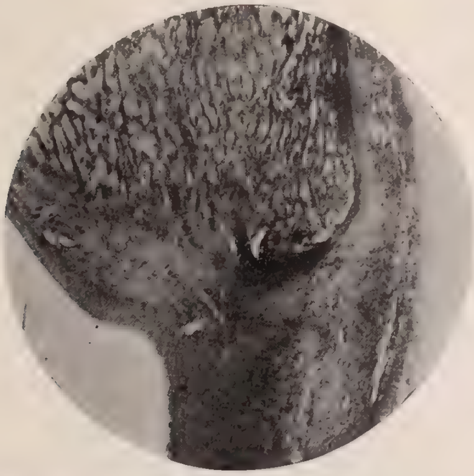
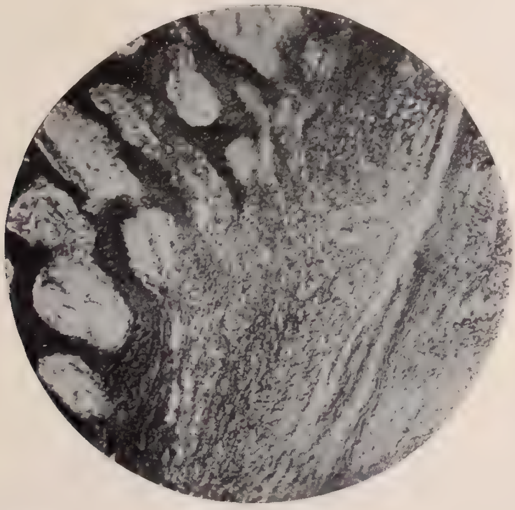


Fig. 18 shows the rim of the alveolus with the fibers of the dental ligament as they pass from the gingivæ to the peridental tissue. While under low power these fibers appear to be fairly normal, under higher power (Fig. 19) and with proper staining they show marked evidence of degenerative changes. By this time the tooth has become loosened and elongated, and there is evidence of pronounced venous engorgement.

Fig. 19.



From the very brief study given to this part of the subject it is believed that if the fibers of the dental ligament could be preserved, a great part of the peridental disturbances following crowning would be overcome.

While the foregoing disastrous results frequently follow the attachment of large masses of gold to vital teeth with an oxyphosphate cement, they seem much less likely to occur when gutta-percha is employed as the attaching medium. The time allotted for the preparation of this paper was not sufficient to secure any great amount of evidence, but sections were hurriedly made of two such teeth. The history of these teeth is about the same as those referred to in other parts of the paper—gold crowns, teeth lost from lack of support, etc., the only difference being the use of the gutta-percha. Two sections were made (Fig. 20 and 21) and both of them show pulp tissue quite remarkable for its freedom from pathologic signs.

Fig. 20.

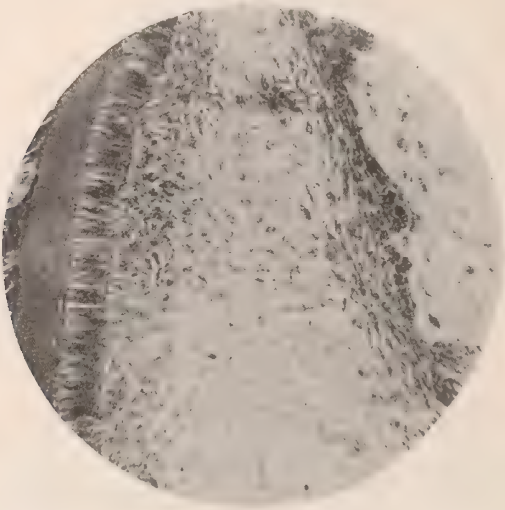
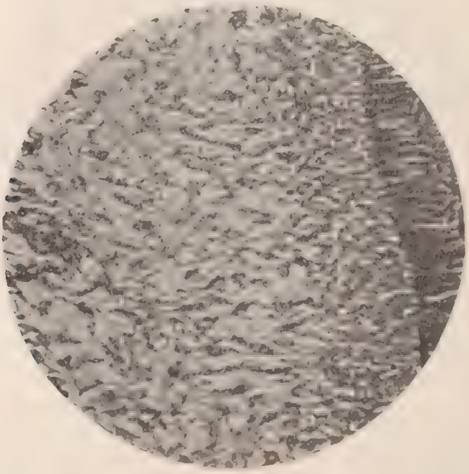


Fig. 21.



DEDUCTIONS

My deductions therefore are as follows:

(1) That the effect upon the tissues of the vital tooth when partly or entirely incased by large masses of gold is in the majority of instances more or less harmful.

(2) That this is especially so when the terminal branches of the dentinal fibers are exposed.

(3) That there may be a non-carious destruction or disintegration of the enamel in connection with disintegrating cement beneath these masses of gold.

(4) That there will follow in nearly every instance pathology of the pulp, which in turn will result in its death.

(5) That the peridental tissue suffers more from mechanical irritation than from overwork.

(6) That all the foregoing conditions are less likely to occur when gutta-percha is substituted for cement.

DISCUSSION.

Dr. M. H. Fletcher, Cincinnati: The presentation of this subject is very interesting to me and very instructive. Dr. Broomell gave me a few lines describing something of what he expected to say, but not much of the detail, consequently, I had little excepting what I have heard to base an answer upon.

It is an interesting fact that twenty-three years ago it was my pleasure to give, before the IX. International Medical Congress in Washington, in 1887, a paper on practically the same subject, "The New Growths of the Pulp Chamber," (Paper and discussion to be found in Volume V., page 511 of transactions of the Ninth International Medical Congress.) When I found Dr. Broomell's paper was to be in that line I brought some of my slides. The slides, however, which are to be presented here are lantern slides instead of actual sections of the teeth which were used then. I hoped we might be able to use a projecting microscope tonight which gives all the detail, enabling one to run the pulp chamber from beginning to end, showing the many features of the new growths and deposits of the pulp chamber which cannot be seen in a photograph. They should throw some light on the paper of Dr. Rhein's as well as that of Dr. Broomell's.

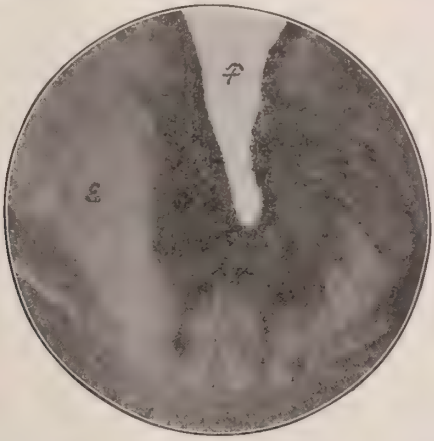


Fig. 1—Fissure in bicuspid showing incipient decay in enamel.

These are photographs of crown sections, and what I wish to show is simply augmentive to what Dr. Broomell has shown. He has put before you more especially, the changes of the pulp itself. My efforts were toward seeing what the result of irritation was on the tooth structure. In other words to answer a question which came to me soon after taking up the study of dentistry, viz: why, after a filling has been inserted, there is often pain and sensitiveness which in most cases disappears in time? My good old Quaker preceptor could not tell me; not could he refer me to literature on the subject. So I took up the work of answering the question and it required seven years to do so to my own satisfaction.

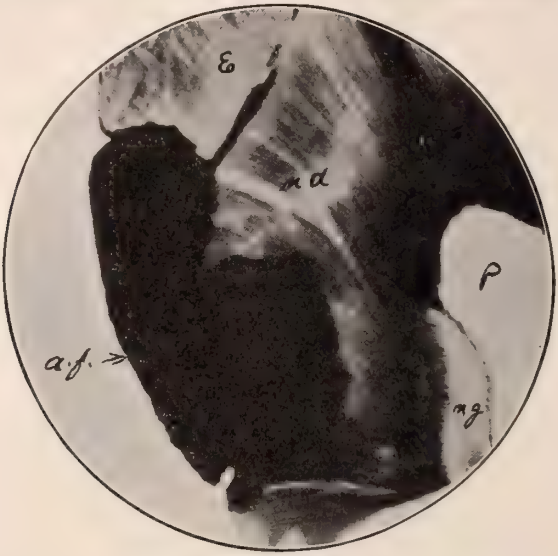


Fig. 2

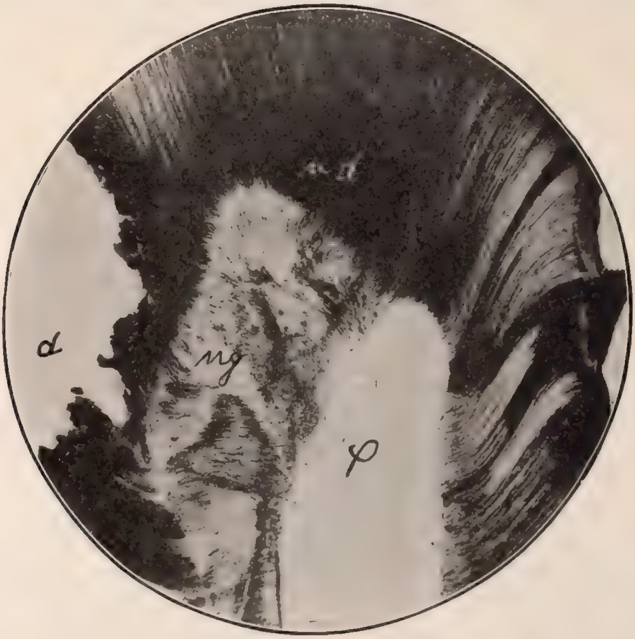


Fig. 3

The first illustration, Fig. 1, is a section of the crown of a bicuspid showing incipient decay in the fissure, much the same as Dr. Broomell showed. The following photomicrographs all show the effects of an irritant on the peripheral ends of dentinal fibrilla; these irritants may be various and may have various results as the sections will show. They may come from fillings, abrasions, decay, metal crowns, bands or acids. The effect does not show in the pulp chamber, however, until the enamel has been penetrated or the dentine is notched at the necks beyond the enamel, unless it be by metal crowns or bands which convey thermal changes in an abnormal way.

Fig. 2 shows a new growth of "Protective Dentin" in the pulp chamber caused by thermal changes conveyed to the dentin through an amalgam filling. This section is made through filling and tooth structure, showing that only the fibrilla in contact with the filing have become irritated in the pulp chamber, causing the odontoblasts to act.

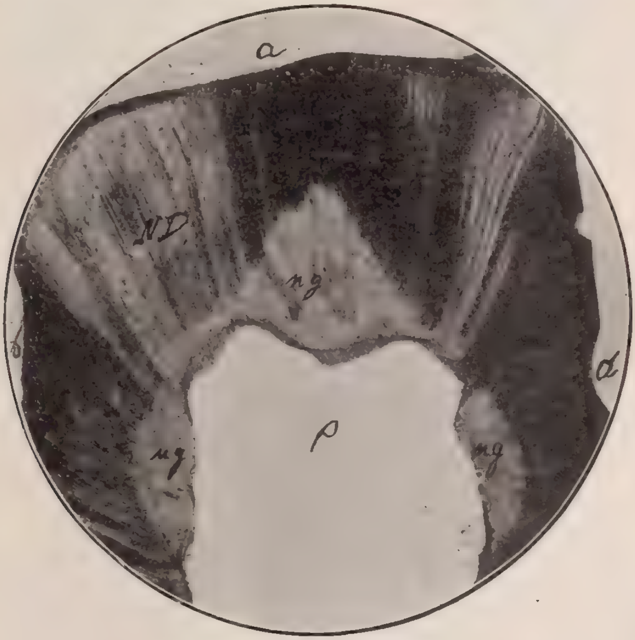


Fig. 4

Fig. 3 shows decay in the approximal surfaces of a canine and shows how beautifully the pulp has protected itself against an exposure.

Fig. 4 is a section of a deciduous canine which illustrates that this new growth in the pulp chamber begins to form as soon as the irritation begins, and that secondary dentin is not confined to old people nor to permanent teeth.

Fig. 5 is interesting in that it shows where the nerve and blood supply has been almost cut off from the pulp, by new growth induced by decay at the neck of the tooth. In this case, and this is typical of a number I have seen, the opening through the new growth at the neck was not much larger than the special foramen at the point of the root. The pulp no doubt would soon have died in this tooth and when one came to treat this as an abscessed tooth it is easily seen how difficult it would be to insert a broach into the root canal. This condition often accounts for failures in properly preparing and filling root canals, which failure may result in the return of abscesses.

Figs. 6 and 7 are crown and longitudinal sections of a lower central incisor of a man of fifty, in which the crown had been worn to more than halfway down to the neck. Section six is the top of the tooth showing how nearly filled the pulp chamber is. The fracture in the center of this section is incidental to the mounting, but it also shows that the new growth of dentine was not attached to the wall, a condition that always exists in human teeth.

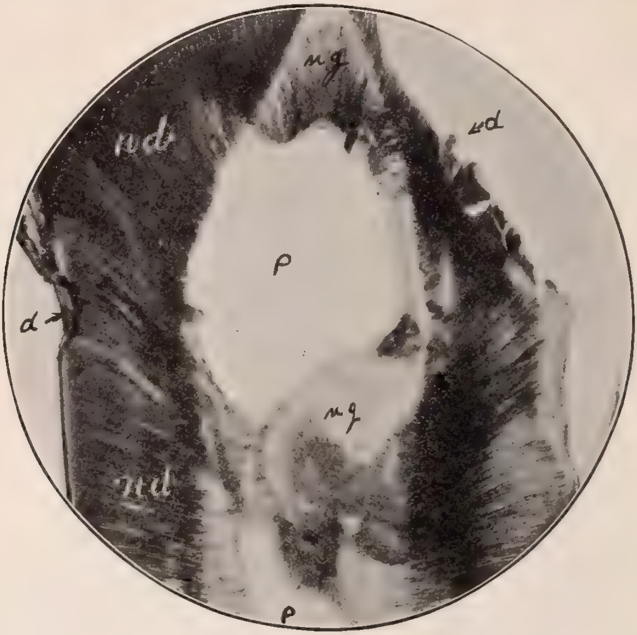


Fig. 5

Fig. 7 also shows this feature. This is a section of the tooth from the neck down and shows that the pulp chamber has become reduced to the size of the root canal. The pulp was dying in this tooth and was accompanied by sharp neuralgic pains, which usually accompany such a condition. The pulp chambers and root canals are never

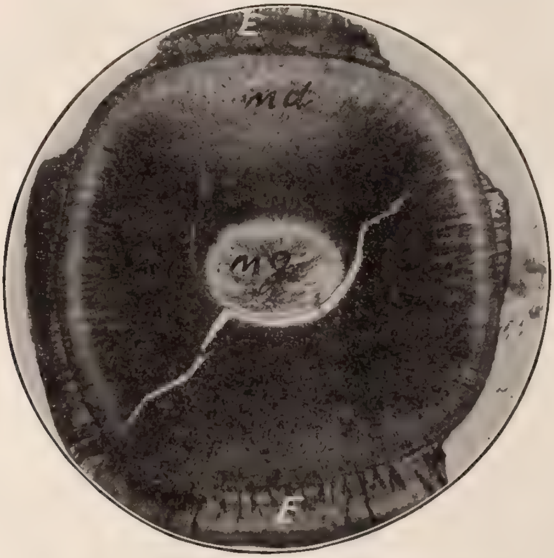


Fig. 6—Cross section of lower central secondary dentine from abrasion.

completely filled by this new growth as was claimed by Dr. W. H. Atkinson. He offered fifty dollars if anyone would show him a specimen contradicting this statement and was very demonstrative and enthusiastic in discussing this paper in 1887, when I made a similar statement and showed these specimens.

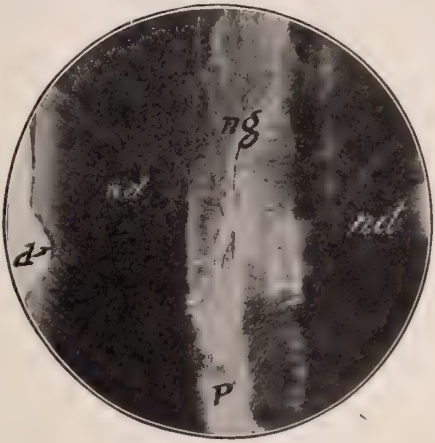


Fig. 7—Lower central secondary dentine, longitudinal sec. from abrasion.

Fig. 8 illustrates a pulp chamber of a molar almost filled with a pedunculated tumor of new growth. The tumor has been broken loose in the mounting at the part marked P. D. Another growth into the chamber can be seen starting in the upper right of the chamber. These growths were the result of a large amalgam filling covering the buccal and crown surface of the tooth.

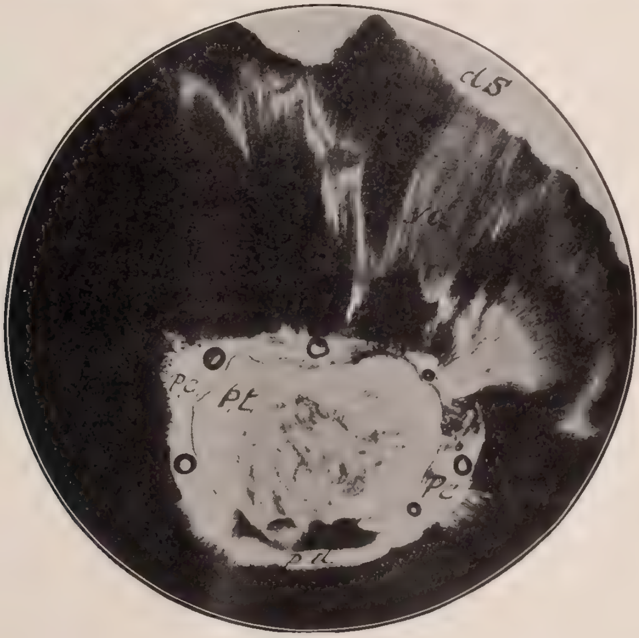


Fig. 8—Tumor of dentine in situ

The result of such large fillings is often pulp nodules either large or small or both, often resulting in dead pulps, usually preceded, however, with a long period of pain of a neuralgic character varying in degree from discomfort to that approaching tic-douloureux.

The specimens here shown are typical of many varieties of new growth which could be shown all of which should direct one's attention very closely to this very prolific source of disease and pain as has been beautifully put before us by the essayist. They should also show us that a new growth which at first is merely nature's way of protection, if carried too far, becomes a source of danger and disease to the organ involved.

Fig. 1.—Section of Bicuspid, X-40 diameters; F, Central Fissure in crown; e, Enamel; d, Dentine; i. d., Incipient decay.

Fig. 2.—Section of lower molar through amalgam filling in situ, X-18 diameters; p, pulp chamber; n. d., normal dentine; e, enamel; a. f., amalgam filling; n. g., new or protected growth in pulp chamber.

Fig. 3.—Section of canine, X-14 diameters; n. d., normal dentine;; d, decay; n. g., new growth to protect from exposure; d, decay.

Fig. 4.—Longitudinal section of deciduous canine, X-14 diameters; p, pulp chamber; a, abraded surface; d. d., decay at neck; n. g., protective growth.

Fig. 5.—Longitudinal section of a canine, X-18 diameters; p, pulp chamber; n. d., normal dentine; d., decay; n. g., new growth of dentine.

Fig. 6.—Cross section of lower central incisor, X-14 diameters; n. d., normal dentine; e., enamel; n. g., new growth.

Fig. 7.—Longitudinal section of the same tooth as No. 6, X-14 diameters; n. d., normal dentine; p., pulp chamber; n. g., new growth; d., decay.

Fig. 8.—Cross section of lower first molar, X-14 diameters; p., pulp chamber; p. d., peduncle, where tumor of dentine was attached to pulp chamber; n. d., normal dentine; d. s., former decayed surface where large amalgam filling came against the dentine.

Dr. G. E. Bishop, Cleveland: There is one thing, one point that I would like to call attention to and that is this, we all recognize the fact that fillings of all sorts and gold crowns have this effect on teeth to a certain extent, but it seems to me that we should not lose sight of another fact that those conditions in themselves do not produce the irritating effects or a bad irritating effect on the tooth sufficienly to cause the death of the pulp or to affect the general health of the person. The presence of those fillings do not in themselves produce the bad effects in the tooth, but are only a contributing cause to the conditions that may occur as time goes on.

Dr. Frank Aker, Cleveland, Ohio: I have been delighted to hear this exceedingly interesting paper, and to note that it has established what was taught by conservative men fifteen or sixteen years ago under our ex-president, or soon to be ex-president, Dr. Whitslar and Dr. Wilson. We were taught these conservative principles of not allowing large masses of metal to interfere with the life of the pulp where possible, but I would not go to the extreme of the deductions which Dr. Broomell has made. He would prefer in a majority of cases to bring about the death of that pulp in order to save future trouble. I believe in the great majority of operations—if there could be any statistics gathered, showing where large masses of gold or cement had been placed —that the certainty of destruction of these pulps would not be at all as frequent as the doctor seems to intimate. If that were the case there would be a great deal more trouble under bridge work today. It seems to me that these slides do indicate in these special cases where the pulp was affected that that may be a cause of the difficulty with that particular pulp, but I think also as the doctor brought out in one of his statements that the temperament of the case in which such a crown has been placed will make a great difference,—in a lymphatic temperament I think there will be much less resistance to the irritation than there would be in the case of a highly nervous individual.

H. T. SMITH, Cincinnati, O.: The paper is exceedingly interesting, and I would like to ask Dr. Broomell whether he considers that the slides he has shown indicate exceptional cases or conditions present under all shell cap crowns and taking place under large gold inlays. Perhaps the most unusual histo-pathological feature shown on the screen is the change taking place in the enamel, the molecular change. We have supposed that after enamel is once formed, though it may be defective in structure showing hypoplasia, it may have certain developmental defects, yet there is no further change except under external influences, those of acid, traumatic and abrasive conditions, but now the essayist shows an internal molecular change taking place that is most peculiar. Are we to expect these changes under all caps and crowns; is it due to the irritating action of the oxyphosphate before crystalization is complete; do these changes take place because of the oxyphosphate or in spite of it?

DR. BROOMELL (Closing discussion): The question asked regarding the effect of large metallic fillings I cannot answer, because my experiments were not made on teeth containing fillings, three of them were made on teeth which supported bridges by lugs, and we might almost consider these in the nature of fillings because they only cover a portion of the tooth. The question might arise as to why in the cases shown, we did not recognize a deposit of secondary dentine, such as Dr. Fletcher has shown. The answer would be that most of them were from teeth that supported gold caps, and the irritation was on all sides alike, so that there might have been a new growth of protecting dentine without any pronounced sign on the inner surface of the dentine.

I don't want to be mistaken as fully advocating what I am preaching, because I do not always practice what I preach. This work was done for the satisfaction of the experiment. The sections, most of them, were made in the college laboratory and the patients were provided from the general clinic. They were patients taken at random without any special effort to seek out cases which would apply to the thought I had in mind. I do not know whether I believed in what I said or not, it is quite true that the experiments were limited in number. I don't believe in every case where a tooth is capped with a gold crown that the pulp will lose its vitality; neither do I believe the hard tissue will in every case be affected, but here were some eight or ten teeth taken for the purpose of investigation in this direction, and each one of them, with the exception of the tooth swung between the two natural teeth, showed some pathological disturbance. I think, therefore, we might reasonably expect that the presence of these foreign bodies are detrimental to some degree. I cannot close, Mr. Chairman, without thanking the society for the honor conferred upon me by making me a member of this society.

THE HUMAN HAND*

By W. H. Whitslar, M. D., D. D. S., Cleveland, O.

A BEAUTIFUL and wise maxim was engraved in letters of gold upon the front of the Temple of Delphos, in Greece, over five hundred years before the Christian era. This maxim, "Know Thyself," was said to have been in honor of Croesus, the richest man of the world, because of his benefactions.

It is evident that such a maxim is more easily admired than put into practice. However, in the light of the present century, with the development of sciences and the revelations of natural phenomena, man should know himself better than ever before. He has always controlled the living creatures below him, and had the usage of the earth by the Divine command. He has increased his knowledge century by century, until now the physical forces are harnessed and utilized with comparative ease. Not only are the physical forces being understood, but the metaphysical are awakening great interest.

---

*President's Address at Ohio State Dental Society, Dec., 1909.

The recent development aroused by the Emanuel movement is furthering the instruction that mind is becoming more comprehensible and capable of a moulding influence. To know oneself and not have *will* to resist temptation is weakness; to understand these weaknesses and be careless is a crime. The world, however, is growing better, because more people are enlightened. It is not entirely a new regime that the world is better, because many of these great lessons were well understood by the Ancients. Socrates, Plato and Aristotle wrote wisely.

The destruction of the great library of Alexandria by the monstrous order of Caesar was a calamity to all nations, since it had stored in its archives much valuable knowledge of the ancients that was irretrievably lost, otherwise the advances would have been made earlier. We are now retracing some of the steps of these ancients, and with the aid of the microscope, telescope and hundreds of devices, of which they knew not, the essentials of life are being discovered.

One of the modes of discovery pertaining to the knowledge of man knowing himself is the comparisons with lower animals. The greatest difference lies in the quality and quantity of the brain, together with the use of a hand or similar appendages.

The difference in mind between man and the higher animals is one of degree and not of kind. Love, memory, attention, curiosity, imitation, and reason are found in the lower animals in varying degrees. The moral sense probably shows the highest distinction between man and the lower animals as far as their mentality is concerned.

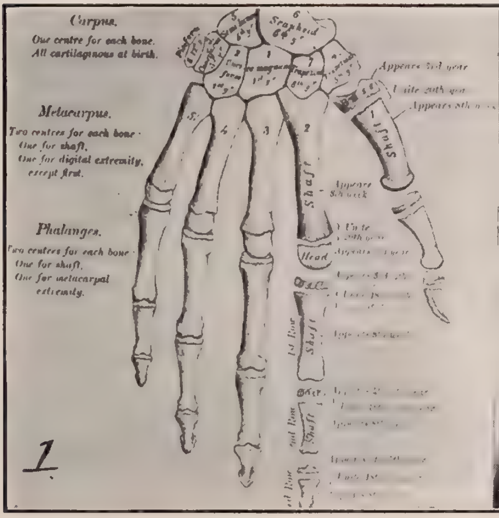
Linnaeus placed man in the same order as apes and lemurs, namely, the Primates. It is very likely that no order presents such a variety of gradations as this one, but man is placed at the head because of his head, hand and foot.

As we have for our consideration the hand, we shall omit the uses of the foot, suffice it to say that man is the only animal that stands erect and upon the flat side of his foot. In exceptional cases, where hands have been lost, persons have acquired dexterity in using the toes to hold a pen in writing, needle in sewing, and a brush in painting. The ourang-outang, it is said, can grasp round objects better with the foot than with the hand. The foot in monkeys resembles the hand, but are not true hands having a muscle, the pereoneus longus, in the foot similar to the foot of man.

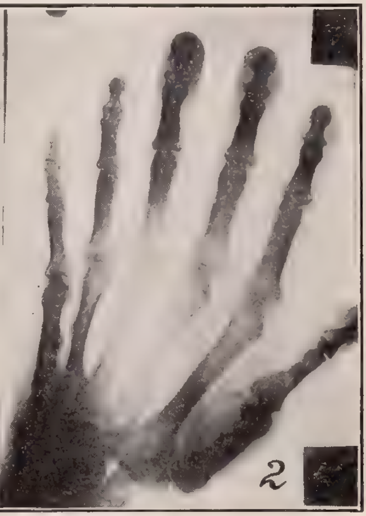
In the lower animals various substitutes may be found for the hand, which serve these animals adequately for the world they live in.

In some of the lowest animals, simply hairs extending from the body are used for touch organs. Others have pseudopodia or false feet. Among insects, small extending arms are "feelers" and various methods of becoming cognizant of external bodies are by substitutes of one kind or another. This is curiously illustrated by fish that cling to rocks and ships by peculiar suckers. More interesting are those fish, perca scandens, which leave the water and climb trees by means of spinous processes of the gills and fins.

In the higher divisions of animals, the mammalia, which includes birds, reptiles, amphibia and fishes, we find bones which are identified by distinct features adjusted to different purposes, all having the same relations, similar to the bones in man, which administers to the compound motions of the hand. This is recognized in the mole with its strong apparatus for digging, the wing of the eagle to rise in the air, the hoofs of the horse, fin of the salmon, the trunk of the elephant, and the retractile claw of the lion's paw. These examples are diversified and illustrate analogous organs to the hands.



Bones of Hand With Plan of Development.



X-Ray Picture of Human Hand With Six Fingers.

Technically, the hand is the terminal segment of the fore-limb of any vertebrate above the fishes, consisting of three divisions, the carpus, metacarpus and phalanges. It it the end of the fore-arm including the wrist, palm, fingers and thumb. The perfect development is found only in man. Other animals, monkeys, mice, squirrels and opossums possess prehensile paws only in the broad sense of the word.

The hand is one of the most distinctive characteristics of man. If it were not of high organization, man would be an inferior animal, because it enables him to supply his wants and lends to his social qualities thereby. Some animals have horns, hoofs, teeth, talons, claws, spurs or beaks for natural defense, but man is bereft of these and resorts to hands and reason to use them. The hand is the executive part of his upper limb and the active agency of the organ of the Will. It is a combination of strength and delicacy as well as an index of the character of man from childhood to old age. As an organ of touch or feeling, it is not passive, but selects objects in the dark as well as in the light. The human hand is an organ so delicately arranged that the biologist has turned to it in search of a typical structure. By reason of its mobility and its articulated structure, it is especially adapted to be an organ of touch, and the fine sense which education confers on it tends still further to widen the difference between the human hand and that of the ape. We find every organ of sense, with the exception of that of touch, more perfect in brutes than man. Because of his sensitive touch in the hand, man claims superiority over all animals. It is interesting to know that all creatures protected by feathers, shells, or scales, have an exquisite sense of touch in the mouth.

In man the sense of touch varies in different parts of the body.

The average distance at which two points are appreciated and not seemingly one are as follows: Tip of tongue, 1 m.m. (1-25 in.); tips of fingers, 2 m.m.; lips, 3 m.m.; back of fingers, 6 m.m.; back of hand, 30 m.m.; back, 60 to 80 m.m. From this we observe that the fingers are very sensitive,, which is further illustrated by the fact that the time taken for sensation to produce a response is for the hand about 0.12 of a second. Experiments show the hand to respond more quickly than sensations of seeing or, hearing.

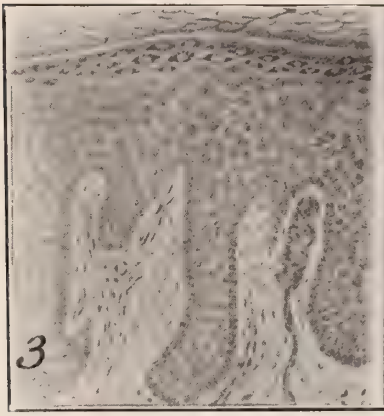
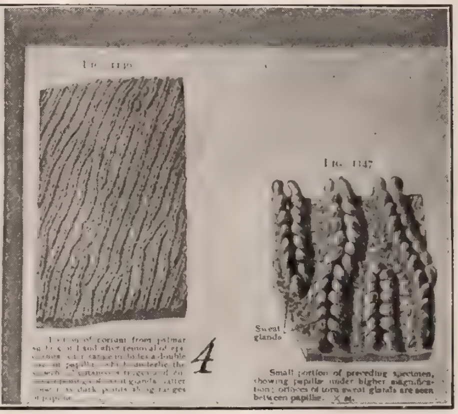

3

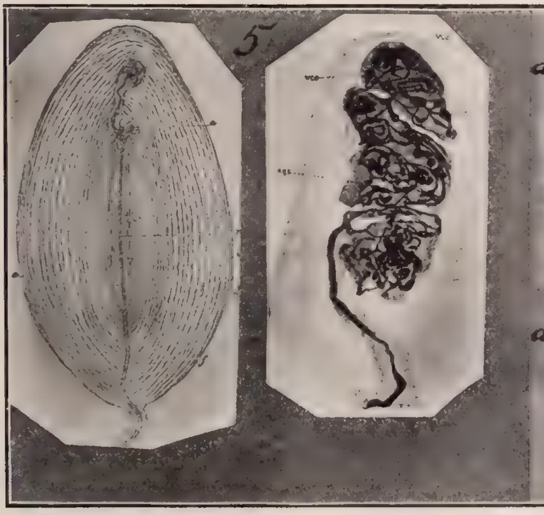
Diagram of Skin Showing Nerve Ending In Papilla.


4

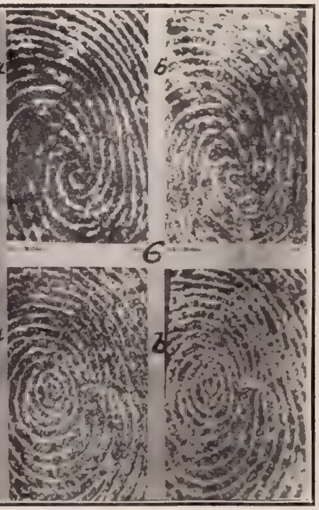
Sweat glands
Small portion of preceding specimen, showing papillæ under higher magnification; orifices of torn sweat glands are seen between papillæ.

Papillary Ridges of Hand.—Right Side Enlarged View.

The functions of the hand are in a great measure due to its mobility, which is also dependent upon the construction of the arm and hand consisting of bones, muscles (about fifty in number), sinews, blood vessels, nerves, and the skin. The skin provides organs which are the out-posts of the brain, the Will center. These are little cellular organs or corpuscles which have the function of receiving these impressions and not unlike a telegraph instrument transmitting them to another terminal, the central office. These organs are known as the tactile corpuscles of Meissner, Pacinian bodies, and end bulbs, the simplest are found in the mucous membrane of the mouth, and conjunctiva. Nerves end in these corpuscles and direct communication with the brain or spinal cord is maintained through the nerves which are nerves of sensation. Likewise nerves of motion are connected with every muscle of the hand which moves it, and the blood vessels which control the circulation. There is coordination in all these processes, and especially with the hand, so much so that there is not a muscle of the body that could not be reached directly or indirectly by a pressure on the tip of the finger. The tactile corpuscles are thickly situated in the palms of the hands and are located in the papillary ridges we see covering the surface. These ridges are important to give the corpuscles elevation to receive impressions, and to provide little drains to carry away perspiration from the openings of the sweat glands along the ridges. These ridges also have another practical purpose in providing a never changing map of the hand. These ridges never change as has been shown by Francis Galton, who found that Sir William Hershall had been utilizing finger-prints in India as a means of identification. It is said that finger-prints have been used in China in the early centuries, but no authentic records are known. The Bertillon system of identification includes finger-prints, but it is due Mr. Galton to have discovered that the papillary ridges have never changing patterns in each individual, which, reduced to proper recording, will prove a never failing means of identifying the dead, criminals, lost children, etc. Heredity is manifested in these ridges. Prof. Harris H. Wilder has further studied the proposition of positive identification by including the palms of the hand and soles of the feet, which have papillary ridges. The perfection and constancy of these ridges are directly proportional to its necessity in the life of the



Pacinian
Meissner's Corpuscle.
Sense of Touch in Nerve Endings.



Papillary Ridges.—B.-prints
Made 14 Years After A.
No Change in Outline.

organism. The arboreal primate has ridges in the feet, which help to determine the contact surfaces of the tree-boughs, and this is of vital importance lest the slightest deviation might prove fatal to climbing.

Epidermic ridges are an inheritance and are found in an adult condition in a four month's embryo and no change takes place afterward in any detail throughout life. Egyptian mummies retain their palmer surfaces and ridges. Prehistoric cliff dwellers dried in rarefied mountain air retain patterns of ridges.

Thus we observe how carefully Nature provides for self-protection through these sense-organs of touch from early life to its end.

What is touch?

"Touch is that peculiar sensibility which gives consciousness of the resistance of external matter, and makes us acquainted with hardness, smoothness, roughness, size, and form of bodies. It enables us to distinguish what is external from what belongs to us; and while it informs us of the geometrical quantities of bodies, we must refer to this sense also our judgment of distance, of motion, of number, and of time." (Bell)

Physiologists and psychologists are agreed that without the sense of touch we could have no knowledge of length, breadth or thickness. Without it every object would appear flat and no adequate conception of the position of objects in space could be attained. I can also add that upon good authority it is certain that without the thumb and its capability of opposing each and every finger, there would be less than one-fourth of the human arts invented. We would probably be but little above the monkeys. By this I mean that without the thumb so little would be accomplished in manufactures of all kinds, and facilities we now have. The scale of accommodation of the thumb and fingers in their power to seize and hold a given object in the adult hand, ranges from one-thousandth part of one inch to that of about seven linear inches. Monkeys have short thumbs. The hand was evidently made to grasp cylindrical bodies as limbs of trees, because the fingers fold upon the palm straight and not obliquely as in man. Man can grasp spherical bodies better because of this condition and the long thumb. On the length, strength, free lateral motion and perfect mobility of the thumb depends the power of the human hand.

With this sense of touch the combination of muscular sense enhances the power of the hand to the height of its glory. The muscular sense begins in the new-born in the lips and tongue. Next the hand finds its way to the mouth, and as soon as it can grasp an object it is carried to the mouth. Knowledge of external bodies begins as soon as the hands know something of its own body, then as grasping and holding a body becomes a reality, vision is acquired. Gradual lengthening the arm and extending its motions, the infant learns to measure distance and form.

To illustrate muscular sense more fully, witness the blind man as he stands erect. The symmetry of his body does not hold him upward as of a statue which must be soldered to its pedestal, but this posture is due to a sense which knows the inclination of his body and the ready aptitude to adjust it. The degree of exertion in the muscular frame is so finely adjusted that we scarcely realize it, excepting when in danger. The blind have the sense of touch and muscular sense preeminently developed. They are able to work in many mechanical arts and become so expert as to outshine those who have eyes. The lack of sight, however, lessens the time in doing such work because of inability to change one tool for another with rapidity. In literature and science the blind have made great achievements. I have only to refer to Homer and Milton, poets; Huber, the naturalist; Holman, the traveler; and many others, including divines, lawyers and physicians.

We have all heard of the wonderful achievements of Miss Helen Keller, who besides recognizing form, has demonstrated other endowments. She remembers the grasp of fingers she has held before, all the characteristic tightening of the muscles that makes one person's hand-shake different from that of another. Miss Keller says in the story of her life, "The hands of those I meet are dumbly eloquent to me. The touch of some hands is an impertinence. I have met people so empty of joy, that when I clasped their frosty finger-tips, it seemed as if I were shaking hands with a northeast storm. Others there are whose hands have sunbeams in them, so that their grasp warms my heart. It may be only the clinging touch of a child's hand; but there is as much potential sunshine in it for me as there is in a loving glance for others. A hearty hand-shake or a friendly letter gives me genuine pleasure."

Again she says, "In reading my teacher's lips I was wholly dependent on my fingers; I had to use the sense of touch in catching the vibrations of the throat, the movements of the mouth and expressions of the face."

The human hand has always been a great factor in the civilization and christianization of the world. One of the earliest institutions of Christianity was that of the "Imposition of Hands." Hands are folded in prayer, and blessings are given by the clergy with the thumb and first two fingers, representing the Trinity, which was invoked in the blessing.

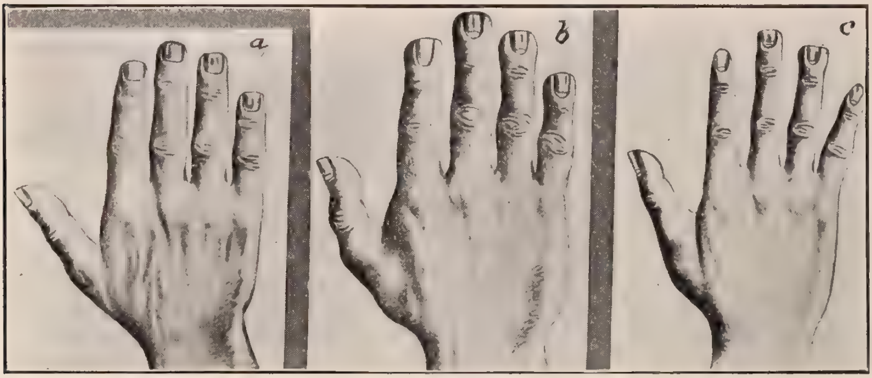
"It will be remembered that the saintly hand of John the Baptist baptised our Blessed Redeemer in the river Jordan. St. Thomas was faithless until commanded to thrust his hand into the bleeding side of the Saviour. Jesus laid his blessed hand upon their heads and said, 'Suffer little children to come unto me.' Moses set Joshua apart as the leader of the Israelites by laying his hands upon his head." There are more references in the Bible concerning the hand than the head.

The hand in writing has been a wonderful aid to civilization. One grand stroke of the pen, and with it the immortal Lincoln gave the black man liberty. Think of the barriers to personal and religious freedom let down and the gateway of liberty to the down-trodden and oppressed being opened by the signing of the Declaration of Independence by such noble hands as those American patriots. Hand-writing has played notably in the world's history.

The hand in art is a theme of itself. It would seem that Divinity is surely pictured through the medium of Raphael, Michael Angelo and a host of earlier painters and sculptors. Hiram Powers' Greek Slave is a well known modern production of an old theme, but having a wonderful story. I would love to dwell upon the art side of the uses of the hand in that delightful occupation.

Quoting from a former article upon this subject, let me read:

Aristotle called the hand ''the organ of organs'', the active agent of the passive powers of the entire human system. The human hand, Galen says, has enabled us to hold converse with the sages of antiquity. In manufacture the hand has been predominant as it has in sculpture and in art. In verbal instruction the hand has great power, on the stage, the pulpit, and in halls of justice.



Square. Spatulate. Mixed.

Fig. 7. Types of Hands Found Among Dentists.

After the murder of Cicero, his hands and head were sent to the Roman Forum, representing the means by which he had cajoled and deluded the Roman Citizens. The hand is used in symbolic action and is of much necessity in the work of fraternal organizations. We shake hands to show that we are not carrying concealed weapons, and among savages, holding up of the hands is a sign of peace. We swear in court by holding up the right hand.

Fig. 8. Plaster Casts of Artists Hands From Collection of Dr. S. C. G. Watkins.

In a paper read before the New York Odontological Society, and published in the *Dental Cosmos*, November, 1908, from which I have quoted in this paper, it was shown that dental educators have not as yet found any physical test to learn the fitness of a student to become a reasonably good dentist. The mental qualities are easily obtainable. In this paper I have attempted to give a test which would in a measure designate some of the attributes necessary to obtain the information. It was founded upon the study of chirognomy in relation to the silhouettes of the hands of hundreds of dentists which I have collected. Classification reduced the answer to the statement that the forms of hands mostly found were the Square, Spatulate or Mixed hands, the last a combination of the two. The reading of this paper was followed by the discussion of Dr. S. C. G. Watkins of Montclair, N. J., whose fortune it has been to be associated with many artists, and of whose hands he made plaster casts. His description of the hands of artists is like those of dentists. He said, "The hands which I have been accustomed to examine are largely those of artists. Of course they should cover dentistry, for all dentists should be artists."

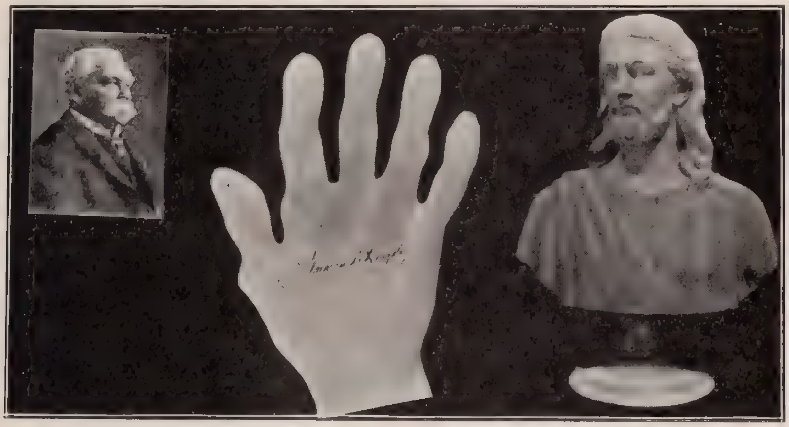


Fig. 9—Dr. Norman W. Kingsley. His Hand and Bust of Christ he Made.

"There has been a feeling and belief during all time that an artistic hand is one which is rather slender, tapering and delicate looking, with long tapering fingers. My study of the hand, if I am right, would prove exactly the contrary. The true artistic hand is more like a strong working hand. The other hand, that hand which has been supposed to be the artistic hand, I claim to be the esthetic hand. The true artistic type of hand is a strong, thick palm, with rather heavily set fingers, long thumb, large thumb joint, and in every way that which would impress you as the working or useful hand, a hand which in its work will show power, strength, individuality, heart and soul." Now, it does not take long to perceive that the hands of dentists and those of our most famous painters are alike. Indeed, some of the best contributions to art and invention have been given by dentists. Richard Wilson Peale was the greatest painter among dentists, and Dr. Norman W. Kingsley, the greatest sculptor, as well as having shown evidence of proficiency in other phases of art. Corresponding with the observations of Dr. Watkins, Dr. Kingsley writes, concerning his own hand, "According to my preconceived notions, it is not the hand of an *artist*—it is rather the ordinary hand of a hardworking mechanic.'' Also, ''My own opinion is that it makes very little difference what the shape of the hand is, it's the Brain behind the hand that can make even stubby fingers nimble.''

The observations of the hand, its color, warmth, texture of skin, nails, and muscular tenseness, are more than common means of diagnosing diseases. This is of so much importance that suitable text may be found in some of the leading works upon diseases. A work written by Dr. Edward Blake ''On the Study of Hand for Indications of Local and General Disease'', is of great value. Time will not permit to indicate fully all the diseases the hand may indicate, suffice it to say that no intelligent physician can overlook this factor.

Of the very many uses the hands are utilized for, that of ascertaining the character and possibilities of an individual is becoming recognized in scientific circles. This is commonly called palmistry, which has been known for thousands of years. History tells of palmistry among the Aryans, and the Greeks developed a clear study of it. Anaxagoras taught it 423 B. C. The Bible mentions it in a number of instances.

''In the hands of all men God placed some signs, that they could thus know their works.'' Job XXXVII.-7.

''Length of days are in her right hand: riches and honor in her left.'' Proverbs III.-16.

With the fall of the Roman Empire, the Dark Ages put its sepulchral finger upon many works of palmistry. The dominant churches of the period then passed ordinances against it and the practice fell into disrepute. The gypsies then appeared and being in bands under their own government were uncontrollable and made pretenses to read fortunes from lines in the hand.

Passing over much history and comments, we are now indebted to two men, who have really systematized the study of the hand so as to read character and life history.

Captain C. S. D'Arpentigny wrote and published in 1843 ''The Science of the Hand'', or ''The Art of Recognizing the Tendencies of the Human Mind by the Observation of the Formations of the Hands.'' His treatise is a remarkable one and treats of the subject as related by the title of the book. The study of the hands is divided into two divisions, namely, study of character by the *forms* of the hands and is called Chirognomy; secondly, study of the lines and mounts of the Palmer surface is Chiromancy.

Both studies together is called Chirosophy. Adrienne Desbarolles took up the study of Chirognomy and substantiated what D'Arpentigny wrote and also produced his studies in Chiromancy, upon which much has been written and practiced.

I believe the best modern work, which is scientific, and which is receiving recognition in many countries, is that written by William G. Benham, entitled, ''The Laws of Scientific Hand Reading.'' As an instructive and practical treatise of the character of man through the hand, this work is most commendable.

V. Guerina.

Seimaro Shimura.

Edwin T. Darby.

S. C. G. Watkins.

C. S. Case

S. H. Guilford.

The uses of the hand are myriad, a complete index of which cannot be told within the limits of this paper. In dentistry the hand is particularly the prominent factor in executing the design conceived in the brain to conserve the health and prosperity of the human race.

Prof. W. D. Miller. Prof. J. Taft.

Prof. G. V. Black. C. R. Butler.

Corydon Palmer. J. N. Crouse.

The uses of the hand may be summed up in the following quotation: "The hand is the essential organ of the mind, the medium of its expression, and the instrument whereby its promptings are carried into execution. "We first see the hand," says Sir Charles Bell, "ministering to man's necessities and sustaining the life of the individual; in the second stage of his progress, we see it adapted to the wants of society, when man becomes a laborer and an artificer; in a state still more advanced, science is brought in aid of mechanical ingenuity, and the elements which seem averse to the progress of society become the means of conducting it. The seas which at first set limits to nations, and grouped mankind into families, are now the means by which they are associated. Philosophical chemistry has associated the elements to man's use; and all tend to the final accomplishments of the great objects to which everything, from the beginning has pointed,—the multiplication and distributing of mankind, and the enlargement of the sources of man's comfort and enjoyment, the relief from too incessant toil, and the consequent improvement of the higher faculties of his nature."

APPLICATION OF THE LEUCODESCENT LIGHT IN DENTAL AND MEDICAL PRACTICE*

By W. G. Ebersole, M. D., D. D. S., Cleveland, O.

The first case was a case of coriza. The patient, Dr. C. Chapman, being unable to breathe through the nose for several days. The application of the light was made for 20 minutes when the patient reported perfect relief, and reported after lamp had been used 5 minutes that he could breathe through the nose with ease.

The second case (Dr. Harry M. Harris) was a case of laryngitis showing marked hoarseness. Application was made 20 minutes and the irritation of the throat was greatly relieved, and the voice became normal.

The third case (Dr. Hulick) was a case of occupation neurasthenia, a condition of the left arm which resembles that of faulty circulation, had been examined by a number of specialists without giving any apparent relief. Light applied for 25 minutes, and the patient stated that the condition seemed to be thoroughly relieved, at least temporarily. The patient reported after 24 hours entire relief.

USE OF THE LEUCODESCENT LAMP*

By S. M. Weaver, D. D. S., Cleveland, O.

The leucodescent lamp was used in this clinic to treat sucessfully a headache for Dr. Lodge. Time of treatment less than ten minutes. Relief complete.

The second case was for relief of swelling after gun-shot wound. Treatment lasting nearly 15 minutes.

The next case was for muscle bruise from tennis playing and the last treatment was for cold in the head. This last case was wonderfully relieved after 10 minutes' treatment.

---

*Clinic at Ohio State Dental Society, 1909.

PRESIDENT'S ADDRESS*

By James E. Dowden, D. D. S., Fairmont, W. Va.

It gives me a great deal of pleasure to welcome you to this our third annual meeting. As the organization has been so recently effected, there is no reason for me to recapitulate except to say that the present organization had its inception in the Ohio Valley Dental Society, as I now understand it. We now may consider the state society beyond the experimental stage; it is now an assured fact, and all it needs is an interest taken by its members and an attendance on all meetings, or as many of them as is possible. We hardly expect to all be officers, or to take part in clinics; but be patient; your time will come. Owing to the mountainous nature of our state, it may at times seem a hardship to attend, owing to bad railroad connections, and, in fact, many will need to resort to the old fashioned way, via stage coach, to attain their object; but owing to the ever onward march of improvement it is absolutely necessary that we attend dental society meetings, or else we become antiquated, and even in the methods we do employ we are very apt to become forgetful and not perform our operations so well as we would if we associated ourselves with dental organizations; and we owe it to our patrons, as well, to give them the best service we can. You may say, "O, well, I take dental journals." Well, what if you do? If it were not for dental societies the journals would become simply trade journals and be filled with advertisements of patented articles inserted by manufacturers. And then, again, operations that are exemplified at our clinics would remain profound secrets in dental offices, and the profession lapse into conditions that once existed, and which might be termed the Dark Ages of Dentistry. But thanks to dental societies, that state of things no longer exists.

There are other reasons why dentists should not absent themselves from the meetings. Legislation is one, and another is the social features which bring dentists together from localities where there are misunderstandings, generally caused by foolish advertising which, after all, frequently brings a class of practice one would hardly care for; very undesirable patients, who are always on the lookout for bargain counter dentistry.

Every dentist needs an outing, and the older he gets the more he needs it—or, rather, the oftener he needs it than the younger men; and the young men will live longer if they take outings at frequent intervals. I am a firm advocate of these outings, and when I get a bit cross, and feel "that tired feeling" coming on, I hie me away to the valleys and the hills, with dog and gun or rod and reel, depending on the season. I believe in getting next to Nature, and admire the man who is a good shot, or who can cast an artificial fly with precision. And whenever a man feels a grouch coming on he should get out of his office and take an outing of some kind. We don't all care to hunt or fish, but there are other ways. I know of no other profession that has the nerve-harrowing experiences as has a busy dentist, and no one needs recreation more than he; and the greatest outing he can have is when he visits with us at our state meetings and renews acquaintance with old friends and classmates, and he will return home with new ideas. The greatest of professional courtesy is the interchange of ideas, and when he next sees his patients it will be a pleasure to operate, and not a hardship.

---

*Given before the West Virginia State Dental Society, Oct., 1909.

I trust you will all have a pleasant and profitable time. We have a splendid program for your consideration, thanks to our Program Committee, who have several eminent gentlemen from our sister states who will have some splendid things to tell you, as I know myself by personal experience, and I trust you will consider the time well spent, and that you will return home with renewed vigor and be better enabled to confront the problems of life.

CASTING ALUMINUM OR AERDENTALLOY BASE DIRECTLY UPON THE TEETH

By H. J. Friedman, D. D. S., Cleveland, Ohio

Procure an accurate impression, and then proceed in the usual manner as for a vulcanite plate, as to bite, etc. The only exception being that in place of plaster you use some investment material for your model.

Select teeth, and articulate upon a wax base plate, try in the mouth, and make alterations, if any are necessary. When the articulation is perfect, and you are satisfied with the arrangement of the teeth, you then trim the wax from around the necks of the teeth, on the labial and buccal sides, allowing but one thickness of wax on these surfaces.

Next trim the palatal portion of the plate, and also remove all surplus wax from the lingual side of the teeth, so that your plate will require little, if any trimming, when cast.

Now return to the labial and buccal sides of the plate, and build a rim of wax around the border of the plate, for retention of the pink vulcanite on these surfaces, make sure that you have a good undercut.

Now you are ready to invest the case in the flask, using the same precautions as you would in any casting.

Boil out the wax and heat slowly. When your flask is red, pour metal and allow it to cool gradually.

When the flask is perfectly cool, remove the plate and trim off the surplus metal. Then build up in wax to restore facial contour. Try in the mouth, and make the necessary alterations. Flask and separate.

Before packing rubber spur the liable and buccal portion of the plate between the necks of the teeth. Pack rubber and vulcanize. Finish in the usual way.

In case a tooth breaks, the plate can be repaired just as readily as a tooth that has its pins imbedded in vulcanite. You simply cut a dovetail in the metal making a good undercut, and attaching tooth to the plate with vulcanite.

PRACTICAL SUGGESTIONS

By E. E. Haverstick, D. D. S., St. Louis, Mo.

By slipping a card between each side of the rubber dam holder and the cheek, after the holder has been adjusted, you can prevent the holder from marking the cheeks of your patient. This is particularly desirable during long operations.

A PRECAUTION IN TREATMENT.

After treating a tooth, it is well to pass a smooth broach through the temporary stopping while it is still warm, to relieve the air pressure, which may have been in the pulp chamber, by pressing the temporary stopping to place. This is particularly important in treating a tooth from which a putrescent pulp has been removed, or one which has an acute alveolar abscess. After a few seconds the opening made by the broach may be closed by a warm instrument.

CASTING CUSPS.

It is an easy matter to cast the cusps on a band for a gold crown. A number of dentists have been doing this for some time, but probably there are a few who have not. Adjust the band to the root to be crowned, place inlay wax over the band and have the patient close the mouth. With a warm instrument, attach the wax to the band at a convenient place or two. Cool with water and slip the band off. Some care should be taken not to displace the wax. Carve up the cusps and carve from the inside the excess of wax, leaving the cusps the desired thickness. Attach sprue wire, and cast the cusps directly to the band. Some solder may be used around the joint on the inside to make sure you have a perfect joint, although probably this would not be necessary. In cases where the root is badly broken down, moist cotton may be pressed inside of the band to prevent a great excess of wax. Those who have not used this method will find that in this way they can make better fitting crowns than they have ever made.

Scrap gold of a sufficient karat may be melted and used to cast the cusps.

This method was first described to me by Dr. S. H. Voyles.

RESTORATION OF LOST MOLARS*

By George N. Wasser, D. D. S., Cleveland, O.

This method embraces simply a cast bridge with inlay attachments. The distinctive feature consists of cementing only one end, letting the other rest in a slot in a cemented inlay. The bar being cast. A well seated inlay will carry two teeth. This method allows the natural investment of the teeth attached to. Whereas if its bridge were soldered to both inlays, one or the other would become uncemented.

---

*Clinic at Ohio State Dental Society, 1909.

A HOME-MADE DENTURE

By Frederick B. Kremer, D. D. S., Minneapolis, Minn.

The following photo proves conclusively that not all of dentistry is in the hands of the profession. This photograph is made from specimens selected from the collection of the writer, to whom they were donated by George Orr of Jordan, Minn.

A farmer living in the vicinity of his town, sustained the loss of a lower incisor by reason of an attack of Pyorrhea, and being of a frugal as well as mechanical turn of mind, he went out into the back yard, picked up a piece of beef bone, and whittled out No. 4 which served the purpose of the lost member for a time; but not finding it wholly satisfactory and thinking to improve upon his first effort, he constructed No. 3 which as you will observe, has flanges or wings extending from it.

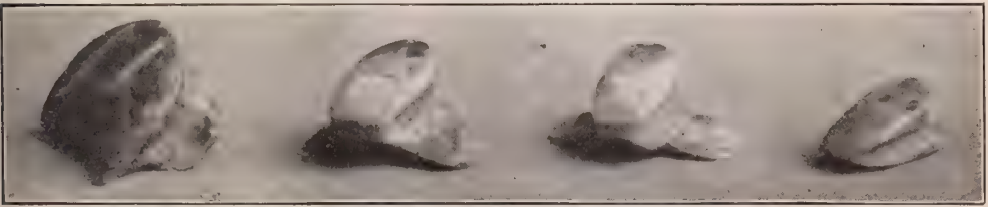


Fig. 1 Fig. 2 Fig. 3 Fig. 4

In the course of time, and due to the progress of the disease, the space widened and No. 4 was made to meet the new condition. This was seemingly so satisfactory, that when as time went on and he sustained the loss of another tooth, he made No. 1 and thus succeeded, for quite a number of years, in depriving the local dentist of a fee.

The pieces are beautifully polished, and show not only a great deal of mechanical skill, but a degree of patience and perseverance in their construction that would be a credit to many of us who have had more advantages and training in this direction, than did this ''horny handed son of toil,'' who worked out this problem with a grindstone, file and emery paper.

HOW TO BRUSH THE TEETH*

By Wm. Crooks Teter, A. M., D. D. S., Cleveland, Ohio

I believe there is only one rational way of brushing the gums and teeth and that is in accord with the natural contour of the teeth, and with a movement of the brush that naturally brings the gums up or down, as the case may be, into the interstitial spaces. If the gums are properly brushed and massaged the teeth will as a consequence, be properly cleansed.

Place the brush in the mouth, up high on the gums and with a rotary, down stroke thoroughly brush all surfaces of the gums and teeth. Pressure on the down stroke, brush slightly tilted with bristles pointing upward.

---

*Clinic at Ohio State Dental Society, 1909.

The movement is the same for the lower jaw, only that the pressure and tilt are reversed.

Gums brushed in this manner will not be punctured by the bristles nor will they bleed much though they are quite soft. There will be no lateral or vertical grooving of the teeth as a result of brushing.

I lay down an iron clad rule for my patients, that they cleanse their mouths thoroughly, by brushing. before breakfast and before retiring. At other times the mouth can be kept clean with picks, floss, and thorough rinsing, brushing of course is acceptable but not imperative.

When a patient needs prophylaxis badly, and the great majority do, I consider it my bounded duty to first put the mouth in fair condition, by thoroughly treating it myself, before I ever instruct them in the methods they should pursue. I have learned by experience that by so doing I save myself a great deal of trouble and my patients a great deal of time in the chair.

A PRESSURE ANAESTHESIA METHOD*

By E. W. Martindale, D. D. S., Columbus, O.

After cleaning out the cavity carefully, not going deep enough to cause much pain to patient, I place in the cavity a small piece of cocaine hydrochlorate, about the size of a pinhead and take a piece of vulcanite and place it gently over the cocaine in a manner which will tend to force the anesthetic into the tooth structure in the direction of the pulp.

Pressure should be very carefully exerted at first, then a larger piece of vulcanite can be placed over the first one and greater pressure rendered. When there is evidence of an effect produced the rubber can be removed and tooth tested by a drop of cold water; if a response is noted repeat the first process; if no pain is produced take a round bud burr and quickly excavate making good and complete access to root canals or canal as the case may be. If there is any delay in getting at all the branches of the pulp, as may be in the case of posterior teeth you can repeat the pressure process. In teeth where there has been no severe inflammation causing aching it is my custom to fill root canals as soon as bleeding has stopped.

But in most cases where inflammation has been causing aching it is more prudent to close up cavity for a few days with some mild antiseptic dressing in the canals. I am using this method on all the teeth from central incisors to third molars.

SALIVA EJECTOR IN CASTING

Dr. S. H. McAfee, New Orleans, La., is using an old saliva ejector attached to his compressed air outfit ''to do the sucking'' for his Roach wax carver whenever he wishes to carve his wax model. Now he is looking around for some way to use the ejector and compressed air to cast an inlay by the vacuum method.

---

*Given as a Clinic at Ohio State Dental Society, 1909.

A CLASS II CASE OF MALOCCLUSION UNDER RETENTION*

By W. E. Newcomb, D. D. S., Cleveland, Ohio

This case I am presenting to demonstrate the great advantage of an active force in retention over a passive force.

The retainers used are best described in "Some Principles of Retention," by Dr. Dewey in the SUMMARY for January, 1910.

The case was retained in June, 1909, and at that time it had far from a finished appearance. But the natural forces by the aid of the active force exerted by the retainers have produced the result which is now next to perfect. There is I think no other retainer at present with the efficiency and universal adaptability for class II and III cases.

Fig. 1 shows the retainers as they were adjusted in this case. Both upper cuspids are banded and connected by bars running both labially and lingually of the four incisors. The lingual bar would not have been necessary in this case but for the fact that the laterals required slight rotation. To each cuspid band is soldered a hook pointing upward and forward. The lower cuspids are banded and connected by a bar resting against the bands are soldered hooks pointing distally and downward. The hooks should be placed as far forward on the molar bands as possible to prevent displacement of the teeth, and also to raise the mesial cusps as the molars are usually leaning forward at a bad angle when the arches are removed. The lower cuspids are banded and connected by a bar resting against the lingual surfaces of the incisors. This is all that is required in this case to retain the lateral expansion and forward position of the incisors. If extensive rotation of the incisors has been accomplished it may also be necessary to have a bar resting in contact with their labial surfaces.

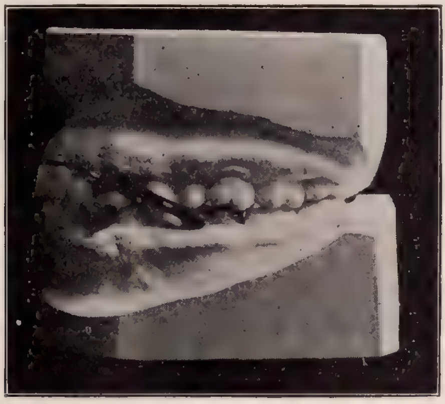


Fig. 1

Now from upper cuspid to first lower molar is stretched a very light rubber band which can be graduated in strength to meet the requirements. In adult cases for the first month or longer it may be necessary to wear the rubbers continually, but later they need only be worn at night, and then a rubber that will exert but a very gentle pressure.

---

*Given as a clinic at Ohio State Dental Society, 1909.

As the surrounding structures begin to functionate normally and the teeth settle into occlusion less and less pressure will be necessary, until the rubbers may be discontinued entirely, for say three days, and then the patient reports and the mouth is inspected. If conditions are satisfactory the patient is asked to report again in a week and next time in two, four or six weeks as the case may be and if there is still no tendency to relapse the rubbers may be dropped and the molar bands removed. It will, however, usually be found necessary to continue the retention in the incisor region for a much longer period.

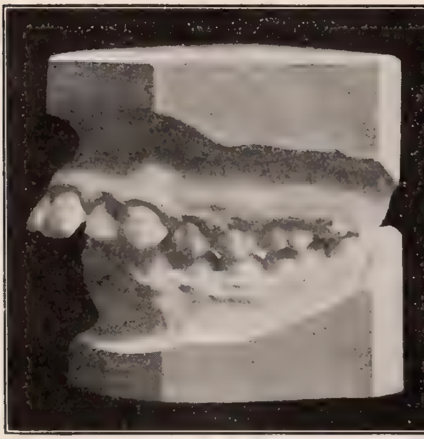


Fig. 2

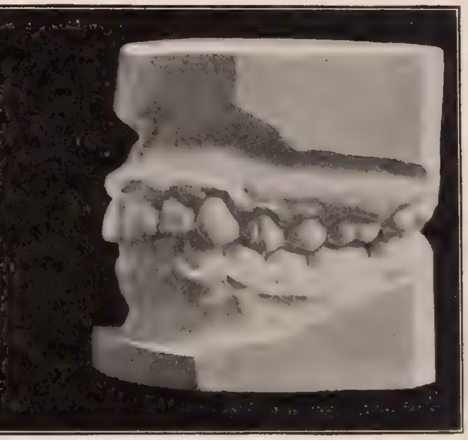


Fig. 3

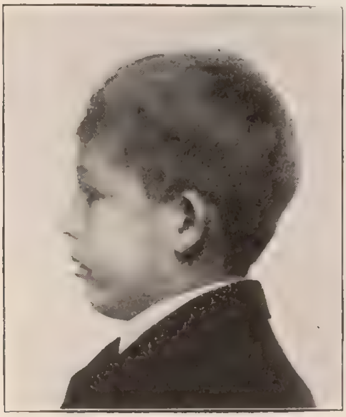


Fig. 4

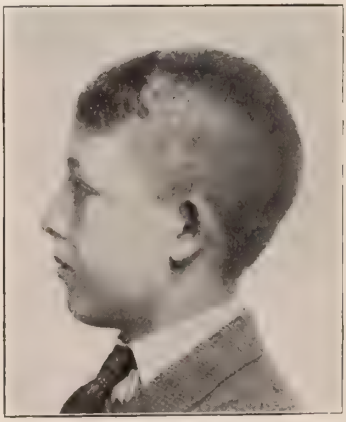


Fig. E

For the big principle of active force in retention and the physiological reason why it is more efficient than the old method of rigid attachment I commend the article above referred to.

Fig. 2 shows the condition of the mouth as it appeared in December, 1908, and Fig. 3 as it looked in June, following, and at the time it was retained. Fig. 4 shows the distorted mouth and receding chin and Fig. 5 the marked general improvement in facial lines following treatment. The last photograph was taken immediately after the appliances were removed and for that reason the lips appear unnaturally full. This, however, disappeared in a few days so that the change is now more pleasing than when the photograph was taken.

THE FARADIC CURRENT IN DENTAL DIAGNOSIS*

By J. G. Parr, D. D. S., Martins Ferry, O.

A tooth may appear to be in a normal and healthy state, and it may respond or not to thermal change, and other tests, and yet the pulp may be dead, the Faradic Current will give positive and instant results and will show whether the pulp is living or dead. Equipment necessary, any style of Faradic Battery, connecting cords and a hand electrode, and a broach holder that is thoroughly insulated from the hand of the operator.

USE

Wrap a few fibers of cotton on the broach, place the hand electrode in one of the patient's hands, wet the cotton on the broach, thoroughly dry the tooth to be tested, then apply the point of broach holding wet cotton to the tooth at a point nearest the pulp, being careful to not allow the electrode to come in contact wih the soft tissue of the mouth which would cause a disagreeable shock to the patient. If there is a metal filling in the tooth to be tested and it is not in contact with the adjoining tooth or touching the gum tissue, or can be thoroughly insulated from both by the use of mica or rubber-dam, the test can be made through the filling, it being in contact with the dentin and being a better conductor than the enamel of the tooth which is a very poor conductor of electricity. On applying the Faradic current if the pulp is alive a slight shock will result, but if the pulp is dead there will be no response from the current.

CAVITY PREPARATION: POSITIVE, RAPID, AUTOMATIC*

By Chas. W. Mills, D. D. S., Chillicothe, O.

In the modern method of cavity preparation, such as extension for prevention, step, etc., we must have a system for exact operating, and not be handicapped by a multiplicity of excavators, nor inflict on our patient a prolonged use of the engine. By preparing cavities in teeth on plaster models the use of the so-called chisels with the "Happy Angles" designed by Dr. R. L. Simpson (manufactured by Lukens and Whittington) were demonstrated.

The blade of these chisels cuts on the sides as well as on the edge. By placing the back against the approximal tooth by pushing or pulling into the embrasure you remove accurately that portion of the tooth most susceptible to recurrent caries. These lingual and buccal walls can then be dressed with the edge of the chisels.

---

*Given as a Clinic at the Ohio Dental Society, 1909.

While the edge of the chisel is shaping the cervical wall the side is just as accurately shaping the pulpal wall, or in the preparation of the pulpal wall the edge is automatically shaping the cervical.

To avoid injury to the gum tissue and the consequent hemorrhage in the preparation of those cavities extending beneath the gum, the buccal and lingual walls should be prepared, then with the matrix properly in place the pulpal and cervical wall may be prepared with ease for the patient, and satisfaction to the operator.

Three of the chisels are bin-angle or universal, while six are contra-angles and the most popular. When used in an upper or lower cavity in the anterior or posterior part of the mouth, the angle places the hand out of the line of vision, thus giving a clear field for the operation. The others of the set are ball and plastic instruments having same general shape and size as the chisels, and a scaler somewhat useful in preparing margins.

SOME INEXPENSIVE CONVENIENCES

The object of this clinic was to show what can be done with small expense in way of conveniences, showing individual parts of each and cost of same.

First: Small electric mouth light for diagnosis, etc. Consists of:

1 Wall socket	$ .25
1 Tap. in plug	.75
Cord and mouth light	1.25
	$2.25

Second: Electric Water Heater consisting of:

1 key socket with holder	$ .25
1 flat reflector electric light	.50
1 metal cup to enclose light and hold glass for water	.65
	$1.40

Third: Sterilizer with pilot light, consisting of:

1 Electric Stove	$3.50
1 copper vessel with inside perforated vessel for instruments	1.50
1 Wall socket	.20
1 Switch	.35
1 Pilot Light	.40
	$5.95

Fourth: Electric motors, direct for $5.00. Alternating for $11.20, answering every ordinary purpose.

Fifth: The Todd folding pumice holder. Cost $.15. Explains itself.

CONSTRUCTING A DENTURE FOR A MOUTH WITH CLEFT PALATE *

By W. B. Kiger, D. D. S., Columbus, Ohio.

The impression for such cases requires to be taken in plaster, so the cast is as nearly the reproduction of the mouth as possible.

Select an impression tray of good depth and large enough to embrace the entire arch, mix the plaster of Paris about the usual consistency, add a small amount of salt to quicken settling, also, add some carmine or methylene-blue to give color to impression to show where to separate because this requires patience and skill not to mar the cast.

In removing of impression from the mouth use force enough to fracture the impression, because some of the plaster has passed into the nasal cavity. This part will remain after removal of tray, so take a pair of pliers and remove the remaining portion by forcing this backward to the throat, where it can be removed and placed to part remaining in tray.

The remainder of procedure—construct the denture as usual except use the Eureka suction appliance to the sides of the arch.

This denture has been used for about two years, and during this time the rubber disks have caused no trouble, except their renewals. The patient has made improvement in speech and much has been added to appearance, saying nothing of usefulness of such dentures in aiding mastication.

GOLD SHELL BICUSPID CROWN USING STEELE FACING*

By J. S. McDonald, D. D. S., Columbus, O.

Construct the shell crown in any manner you desire. Before reinforcing cusps with solder, cut out enough of the buccal surface of the crown to allow the facing and its backing to be set into the cavity thus made and to fill out the contour of the crown as it was before cutting away the gold.

In the cutting, use a knife edge stone and begin at about the middle of the buccal cusp and proceed toward the gingival, to about the gum-line, then cut along the gum-line from the outer surface inward to meet the line already cut.

To the gingival edge of the backing, solder a small piece of pure gold and burnish this over the gingival face of the facing, as in constructing a Richmond crown.

Place the facing together with its backing in the space cut into the crown, and after adjusting and fitting properly, remove the facing and solder the backing in place as you would a cusp. No investment is necessary in soldering.

---

*Given as a clinic at Ohio State Dental Society, 1909.

THE SUCCESSFUL DENTIST

HUMANITARIAN DENTISTRY

By W. G. Ebersole, M. D., D. D. S., Cleveland, Ohio

In writing this article I am fulfilling a promise made to the Editor of the SUMMARY a year ago, when duty called less insistently, and when health and vigor were not wanting quantities.

In recent years we have written and spoken much relative to Humanitarian Dentistry; and, most of that which has come from both pen and tongue has been directed to that phase of the question which had to do more with the prevention of pain in the performing of dental operations, than with the subject as a whole, principally because of the fact that we wished to impress upon the profession the importance of giving to humanity the kind of dentistry which it demands before it will receive dentistry and place it in the sphere to which it properly belongs.

In the past we have been talking to the dental profession, and have been trying to impress upon it the importance of giving to the public first class dental service under conditions which eliminate the painful experiences that most people have had in attempting to have their teeth kept in good condition and free from dental diseases.

We have, through the recent experience in making investigations in the public schools and elsewhere, found an appalling condition of affairs. From 95 to 97% of our children have faulty oral conditions.

To those who have given much thought and attention to these conditions, the results of this investigation does not come as a surprise. To those who have not had their minds directed along these lines until after facts have been presented, the statement of existing conditions, no doubt, produces a shock. It has been a rude awakening to many, both in the profession and out of it.

Twenty years and more ago, we had the true condition which existed between the profession and the public brought vividly to our attention. We saw the teeth of humanity "wasting" or "rotting" away and the public suffering tortures of the very "damned," while nature in her frantic efforts to warn people against the ravages which disease and neglect were making, kept flashing her signals of distress. We saw the great need of humanity for aid in the prevention of oral lesions, and also the need of a kind and sympathetic hand in arresting and correcting existing conditions. We turned and looked in the direction from whence help should come. The sight that met our gaze told the story. Across a deep "chasm" was arrayed the dental profession, struggling to correct faulty conditions of the teeth, giving little thought or attention to the fact that they were working on living, sensitive tissue. The sole object of this work seemed to be the making of a perfect filling with little or no thought of the victim upon whom they were exercising their skill. Humanity, standing on the opposite bank, gazed upon the picture presented, and shuddered, and few indeed were there among the number brave enough to cross the "chasm" of fear and torture and submit to treatment at the hands of a thoughtless if not misguided profession.

That was twenty years and more ago, when we stood on the laity's side of the "chasm." We studied the problem that presented itself and placed the blame where we believed it belonged; and, now, after twenty years, thirteen of which have been spent on the profession's side of the "chasm," we wish to say that in this respect the belief of early youth was not at fault. We held then, and hold now, that the dental profession was and is responsible for the condition in the main. Responsible for the faulty condition of the mouths and teeth of the great suffering public.

The law student of twenty years ago viewed the picture presented, long and well; and, after a time decided that of the four professions, religion, law, medicine and dentistry, law offered the greatest opportunity for the personal advancement of the selfish individual, while dentistry offered the greatest opportunity for one to benefit humanity as a whole. The study of law was abandoned, and that of dentistry and medicine began. The boy law student placed the responsibility on the dental profession and the experienced dentist confirms that judgment.

The dental profession should have taught, long ago, the science of prevention, should have taught the people the value of perfect oral conditions; and then, when performing operations for correcting faulty conditions, should have given as much thought and attention to the victim at the cutting end of the tool as they would have desired had the positions been reversed. It has been the dental profession's failure to do these things that has in the main been responsible for existing conditions.

The people have not been instructed in the care and use of the teeth, and when they decayed, the pain and torture of having them repaired was so great that the majority of the people preferred to submit to the pangs of nature, rather than the twangs of the dentist.

We must educate the public, and laws must be passed which will permit us to do this on a broad scale; but, before we begin to educate the people we must have something to offer them better than that which has been given in the past, else our education will only reach and benefit those who are able to embrace it from the preventive standpoint. So, just so long as we do not offer dentistry free from pain and suffering, just so long will humanity refuse to accept full service at our hands; and defective conditions must continue to exist without the seeking of dental services.

In other words, our first mission must be to teach the profession Humanitarian Methods, both in the way of imparting information from a preventive standpoint, and in instructing them in the art of performing dental services without inflicting pain and torture. Our greatest and most difficult problem lies here.

We are aware that we will be severely criticised for assuming this attitude; but, we beg to call your attention to the fact that we are interested in the welfare of both Humanity and the Profession, and not in the one alone.

We have written and spoken much of pain preventing methods in the past, hoping to have the profession grasp the importance of this teaching, and thus be prepared to embrace the opportunities produced by such agitation as that which is at present being pursued in the education of the public.

We are interested in securing data which will prove the definite value of perfect oral conditions and since we have announced our purpose we have heard many times that when this information was obtained, we would be in position to influence our legislatures to pass laws compelling children in our public schools to have faulty oral conditions corrected at the hands of the profession.

We beg to call to the attention of these enthusiasts the fact that we believe in Humanitarianism in dentistry, and we wish to state emphatically that the passing of any such law under the conditions, would be in direct opposition to Humanitarianism.

We wish to sound the warning that until the lawmakers of this country pass laws which compel the profession to practice what we are pleased to call Humanitarian Dentistry, dentistry free from pain and suffering if you please, no law should be passed which will compel humanity to submit to operations against their will.

What we want, and favor, is the passage of laws which will permit or compel the teaching of prevention by instructing the public, through our schools, in the care and use of their teeth; teaching the value of perfect oral conditions as bearing on the physical, mental and moral welfare of mankind, and then make it possible for every man, woman and child in this broad land of ours to receive services which will make it possible for all to have healthy mouths.

The profession is not ready to receive the public upon this broad plane, and the public will not receive dentistry on the footing which she should attain until dentistry is ready and able to eliminate most if not all of the pain and suffering which is and has been acting as its greatest handicap.

The foregoing is my only excuse and apology for inflicting upon the profession many of the statements which I have already made many times in the past; but, now when so much is being said and done from the Oral Hygienic standpoint and facts are being pressed home upon the public, I wish again to utter my plea for more humane methods in the performance of dental operations: and again we write of the value of pain-preventing methods and of the methods and manner of procedure to accomplish these results.

To most of humanity today, pain and dental operations are synonymous terms due to past or immediate impressions. In dentistry, as far as the pain element goes, the experience of the past is the curse of the present. And the experience of the parent has been exaggerated and handed down to the child until the entire human family stand in awe of the dental profession.

In discussing this subject, I am compelled to quote from other papers. The following is taken from a paper read before The New York Institute of Stomatology, January 5, 1909:

"After years of untiring study of anesthetics, we come to you with the statement that methods and means now at command make it possible to perform all dental operations without an iota of actual physical pain. This statement is absolutely correct. But, while it is true that all pain can be entirely eliminated from dental operations, I do not think it a possibility for all to so practice it. Nor do I think that any one is practicing it in the broad sense in which this statement is made.

While possible, it is yet impossible for most of us to accomplish these results without considerable training. In fact, there is no need of the absolute elimination of the pain element, but there must come a decided reformation in this line if dentistry is to receive her own and stand where the Almighty demands it must stand, that is, at the head of the professions.

Humanitarian methods in dentistry, while giving first thought and consideration to the comfort of the patient during the operation, means dentistry as perfect and as thorough as the most exacting may demand, and yet dentistry so free from pain and suffering that the most timid patient will eagerly submit to its treatment. The demand for this kind of dentistry comes from the patient, and our patients are entitled to and should receive more consideration in the future than has been accorded them in the past.

The people come to us today with fear and trembling. They abhor dentistry and fear dentists, and most of them seek us only when driven to it by intense suffering. People of today cannot and will not stand the torture their forefathers could and did endure. We live and have our being under conditions which produce nervous organisms of so sensitive a nature that the slightest irritation causes suffering. In fact, many times we find patients whose nervous organisms are such that the mere anticipation of pain is sufficient to cause intense suffering.

It is not this or any one class of patients alone that is demanding relief at our hands. Humanity as a whole is pleading for dental work which can be made free from pain and suffering, and yet conserve the health and beauty of the teeth. The people want it, they must have it, and they will get it, or thousands of teeth will be lost annually through fear of the dentist.

To make a plea for more humane methods and not give some insight into the manner of executing them, would, we believe, be an injustice both to the readers and to the writer. Therefore, we will endeavor to suggest some of the methods employed in producing results, in the next installment of this article.

(*To be continued.*)

STAINING ARTIFICIAL TEETH

By F. E. Roach, Chicago, Ill.

The mineral stains and oil colors are absolutely indispensable to the man who is striving for the highest degree of art in his work. And the mastery of their use gives one a feeling of independence that is satisfying. There are no cases of unusual coloring or shading that cannot be matched almost perfectly, and my experience justifies the belief that almost all of the porcelain teeth placed in the mouth will look more natural if a film of these stains be spread over their labial or buccal surfaces.

With a small camel's hair brush moisten the surface of the tooth and then dip the brush into the previously mixed stain and with a stroke of the brush across the surface of the tooth the stain will be evenly spread where desired. The entire surface of the tooth should be gone over to obtain the best results, and care must be taken to avoid blotches by allowing the stain to accumulate in patches.

The firing of these stains may be accomplished with any kind of furnace at a degree of heat running about 1,500 degrees.—*Dental Review.*

A GOOD BASE PLATE

By Robert E. Elster

A base-plate that does not distort as easily as the usual paraffin and wax base-plates do, can be made by rolling out modeling compound upon a glass slab, using an ordinary water tumbler as a roller. Both glass slab and tumbler should be immersed in hot water before using and left wet to prevent the compound from adhering. When sheets of the desired thickness are obtained, cut into three-inch squares. To mold upon the model, soften the compound in warm water, adopt approximately to the model and trim off the surplus with a hot knife. For perfect adaptation, warm the compound gently over a Bunsen burner, and press into place with a piece of absorbent cotton, dipped in hot water. The usual Kingsley bite plate is prepared by the addition of yellow wax.—*Odontologist.*

EDITORIAL

PUBLIC DENTAL HYGIENE EXHIBITS

SEVERAL public dental hygiene exhibits have already been held in the East and as the agitation for better oral conditions is extended through the states, many more will be given in different sections of the country.

One, the Dental Hygiene Conference and Exhibit has recently been held in New York City, (May 12th to 18th, 1910) and to give our readers an idea of the character of this exhibit we will relate what information we have been able to secure.

This educational exhibit on the care of the teeth was given in New York under the auspices of The Dental Hygïene Council of New York, with the co-operation of the Children's Aid Society, the Association for Improving the Condition of the Poor and the Charity Organization Society.

The Exhibits were made up of photographs, plaster casts, charts, placards and pamphlets setting forth the care of the teeth. These being contributed mainly by the Massachusetts, Rhode Island, New York and other Dental Councils.

Aside from the exhibits there were given two series of lectures daily. One, with stereopticon, for children at 3-30 P. M., and one for adults at 8 P. M., prominent speakers being selected to lecture.

Prof. Irving Fisher, of Yale, president of the Committee of One Hundred on National Health, presided at the opening session. He spoke about the importance of the movement for better oral hygiene conditions.

Senator R. L. Owen, of Oklahoma, who introduced in the U. S. senate, a bill for a national department of health spoke at length about the value of such a department to the people of the United States and appealed to the conference for support.

Dr William R. Woodbury, who originated the idea of a dental conference and exhibit in Boston, described the present status of the dental hygiene movement in this country and abroad.

Dr. Woods Hutchinson, in his interesting style, presented many facts about the teeth and oral cavity. He began his talk with the terse saying: "A man is known by the teeth he keeps."

Dr. George W. Goler, who as health officer of Rochester did pioneer work in establishing dental examinations and dental clinics, mentioned some of the apparently unconnected defects which may result from tooth decay.

Dr. T. P. Hyatt, of Brooklyn, spoke along the same lines adding emphasis to what Dr. Goler had said.

Dr. Luther H. Gulick, head of the department of child hygiene of The Russell Sage Foundation, cited some interesting facts about the teeth of the school children.

Dr. S. Adolphus Knopf spoke on the subject: The Relation of Modern Dentistry to the Tuberculosis Problem.

Dr. J. J. Cronin, of the New York Health Department, described its work for dental hygiene.

William Church Osborn of the Chidren's Aid Society spoke about carrying the dental hygiene educational work directly into the schools of New York.

Dr. S. Josephine Baker, chief of the New York Division of Child Hygiene, Katherine D. Blake, member of the Committee of the Women Principals' Association, and others spoke to the assemblages.

The evening sessions were for the general public, one evening being "Mothers' night," another "Teachers' night," etc. More than ten thousand people attended the conference.

The ante-room to the assembly chamber presented a series of screens hung with placards of illustration. The graphic system of instruction employed was reminiscent of kindergarten days, with an added vigor of expression.

"Teeth are the sentinels of the body," was one sentiment inscribed above a line of soldiers drawn in charcoal, while a cannon below was represented as discharging a fusillade of toothpowder at a ragged line of decaying teeth. Likely young persons were depicted with their faces tied up and swollen in various stages of toothache.

Smiling beauties were photographed in series, with good teeth, fair teeth, bad teeth and no teeth. A large photograph of Col. Roosevelt with all his teeth displayed, announced: "Theodore was the first to preach the conservation of our natural resources."—(pictures of natural resources) "Waterfalls,"—(picture of waterfall,) and "quarries,"—(picture of a quarry;) "are no more important than teeth"— (picture of teeth.) "A brush in time" (picture of a mammoth toothbrush) "saves nine"—(picture of nine very ragged teeth.)

Printed placards were on view with trite sayings such as:

"We pass laws to prevent forest fires; shall no steps be taken to prevent our children's teeth from looking like the stumps of a burned-out district?"

"Dental Cripples cannot get full value from food. Bolted food does not properly nourish."

"A crippled mouth, added to prolonged fatigue and exhausting hard work, hastens nervous breakdown."

"No family investment earns more money than the price of prompt and good dental care." etc.

A printed pamphlet bearing the title "Teeth Tract," written by Dr. W. K. Woodbury, neurologist to the Boston Dispensary, was distributed during the conference.

It sets forth ten good reasons for a clean mouth. They are: General good health, good digestion, good breathing, good looks, prevention of swollen faces, prevention of trouble with throat, nose, ears and eyes, prevention of tuberculosis, prevention of nervous disorders and saving of money.

That such exhibits and conferences are of interest and value to the public goes without saying, and the transportation of the New York exhibit to other cities of the United States would prove a great factor in furthering the campaign for dental and oral hygiene.

WHY NOT ORTHODONTOLOGY ?

THE proper word to express "the science which has for its object the correction of malocclusion of the teeth," can only be decided by taking the term and comparing it with similar words, which have a definite meaning.

Orthodontia taken from the Greek, "orthodont" may not be correct from an etymological view and it is difficult to find a word which means all we now understand orthodontia to include. If the science considered only the study of the occlusion of the teeth or the arrangement of them by mechanical means *"orthodontics"* might be the better term. In support of the term "orthodontics" Sir James Murray cites such words as "Alphabetics, Phonetics, Optics, Statics, Dynamics, Tactics, Apologetics, Mathematics." He says "mathematics is the science of quantity."

Optics,—that branch of physical science which treats of the nature and properties of light, its laws of modification. Statics,— that branch of mechanics which treats of the equilibrium of forces. Dynamics,—the sciences of forces producing motion. In other words, it seems as if the words in our language which apply to sciences and end in *ics* are such sciences as are governed by definite laws. There are rules, tables and laws to go by and if we had definite laws in *orthodontia*, and laws and rules only, *orthodontics* might be the better term. To me, optics is but a part of ophthalmology, ophthalmology being a study of the eye, its diseases and means of treating said diseases. Optics comes in for its share and plays its part; but you would not make optics embrace all of ophthalmology.

Likewise orthodontics to me conveys but one part of orthodontology; that side which is more or less mechanical or can at least be practiced by fixed laws and rules. The adjustment of an appliance, using a certain form of anchorage seems to me to be similar to the use of optics in ophthalmology.

We hear much about orthodontia being a sister science or closely related to rhinology. Orthodontology and rhinology would be much better.

Rhinology, that science which treats of the nose and its diseases and treatment of same.

Orthodontology,—that branch of science which treats of the occlusion of the teeth. It would include "Orthodonty." "Orthodontics," the normal development of the parts, the maldevelopment of the same, the evil results of malocclusion, the cause of malocclusion, and would be related to physiology, histology, embryology, rhinology as each was in turn concerned in occlusion.

The "ologies" include sciences which are treated in a broad sense, those which are in the nature of a treatise or discourse, physiology, histology, pathology, geology and any number of others. Some part of all of these may be grouped under laws and rules but to understand any one of them we must go beyond any narrow line of study.

Therefore, orthodontology is a better term, compared to the names of similar sciences, more correct etymologically, and describes the subject as we now understand it better than orthodontia or "orthodontics."

—MARTIN DEWEY.

DEATH OF DR. W. H. TODD

Just as we are going to press death has taken from the profession another of its prominent members in the person of Dr. W. H. Todd, of Columbus, Ohio.

Dr. Todd died suddenly, June 19th, of heart trouble, the end coming suddenly and unexpectedly.

He was one of the most prominent members of the Ohio State Dental Society and had been an ardent worker in this organization for many years.

Dr. Todd was fifty-six years of age, a prominent mason, a Christian gentleman and whole-souled much beloved man. In our next issue we will present a fuller account of his life, especially that that pertains to the profession of dentistry.

POVERTY sits by the cradle of all our great men, and rocks them up to manhood; and this meagre foster-mother remains their faithful companion throughout life.

—*Heine.*

SOCIETY·ANNOUNCEMENTS

The National Dental Association meets at Denver, July 19, 20, 21, 22, 1910.

The Brown Palace will be hotel headquarters.

As Denver has without difficulty cared for such conventions as the Knight Templars, Elks, G. A. R., N. E. A., and the National Democratic Convention, the accommodations are more than ample.

Marshall Pass.
Published by courtesy of Denver & Rio Grande R. R.

The first class hotels of Denver are so numerous that an attempt to enumerate them in the space allotted to this article is out of the question. Rooms without bath can be secured for from $1.00 to $2.50 per day, and for two persons, from $1.50 to $3.00; with bath $1.50 to $3.00, and for two persons in room, $2.00 to $5.00 per day according to location and size of room. In and near the center of the city there are many high class rooming houses where rooms can be secured at lower rates, while in the many excellent restaurants throughout the business section, meals can be procured at reasonable prices. Board and room can also be had in boarding houses or private families.

A booklet on Denver containing a list of all the hotels with their rates together with much other valuable information will be mailed, upon request to the Publicity Committee. To secure the best accommodations, reservations should be made in advance.

Observation Car Through the Grand River Canon and the Royal Gorge.

From the 15th of June, the Committee will have a competent and experienced man, familiar with the City and State, devote his entire time to arranging for the accommodation of all guests, in accordance with their wishes. This plan has been adopted to insure prompt and undivided attention to all of the many matters which are of vital importance to the comfort of the visitors.

Special plans will be made to entertain the wives and families of the visiting dentists during the sessions of the convention.

Summer excursion rates prevail from all parts of the country and details concerning them can be secured from local ticket agents. The summer excursion rates out of Denver to points of interest in Colorado are very low, being on sale continuously throughout the summer; while much lower rates are in effect for three-day excursions: Saturday, Sunday, and Monday; and lower still for Sunday excursions. Certain other days in the week tickets are on sale to all points in the state at rates much lower than the regular excursion rates; and to the principal resorts in the state, especially low fares are in force for parties of three or more traveling on one ticket. All of these tickets have their special features regarding time limit and stop-over privileges. Accommodations can be secured at the various resorts in the state to suit the tastes of all, at from $7.00 per week and up with board; and one may choose to rough it or live at the finest appointed hotels.

Immediately upon arrival, visitors are requested to register and give forwarding instructions for mail. In case any change of address is made while in the city they are requested to notify the Committee at once.

Mail addressed "care National Dental Association, Denver, Colo.," will insure prompt delivery.

Platte Canon.

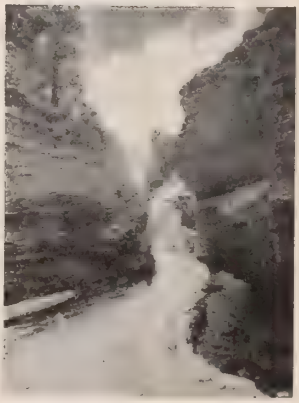
Local offices will be established at the Union Station, July 17th, 18th and 19th, to direct and assist arriving visitors, and throughout the entire meeting offices will be maintained at the Brown Palace Hotel and at the Auditorium, at which latter place will be the principal office of the Local Committee, where can be secured all information relating to the Meeting, the city and state, the hotels and railroads. There will be provided for distribution literature from all the railroads, and complete information concerning vacations in the mountains. A great deal is being said about opportunities for vacations in the mountains simply because we know that people who avail themselves of such, will not be disappointed. This statement is based not upon our own feelings in the matter, but upon the statements of those who spend their summers in Colorado.

Do not fail to bring with you a light overcoat or wrap, and if you are going into the mountains bring warm underwear, strong high shoes and old clothes.

Special train and car service is being arranged from Chicago and St. Louis. The round trip rate from Chicago is $30.00, from St. Louis, $25.00, and from Kansas City and Omaha, $17.50.

Notice:—The rates to Denver from the East apply to Colorado Springs and Pueblo, and that tickets can be purchased through to either of these points, which will enable the purchaser to visit the numerous points of interest south of Denver (Colorado Springs, Manitou, Garden of the Gods, Pike's Peak region, Pueblo, etc.) without any additional expense for transportation. Unlimited stop-overs are allowed, within final limit, in both directions at Denver and Colorado Springs. Tickets may be validated for return passage at either of the points mentioned, leaving it optional with the purchaser whether the ticket is used south of Denver.

Falls in Boulder Canon.



Williams Canon, Manitou.

Many of the rates are not definitely determined yet, but in general they will be based upon a fare and one-third for the round trip. Rates from Ogden, Salt Lake and Utah common points will be $22.50 and from California points the rate will be $55.00, on sale July 14th and 15th, final return limit, three months. There will be cheap excursion rates from Denver to the Pacific Coast.

For hotel reservations, detailed information, vacations, suggestions, estimates etc., write to Dr. H. F. Hoffman, Chairman Publicity Committee N. D. A., 612 California Bldg., Denver, Col.

NEWS and OPINIONS

THE NORTHERN OHIO CONVENTION

The Toledo Meeting Pronounced the Most Successful in the Long History of the Association

The fifty-third annual convention of the Northern Ohio Dental Association, held at Hotel Secor, Toledo, June 7, 8 and 9, is acknowledged to be the most successful ever held since its organization in 1857.

Organized at Cleveland, fifty-three years ago, with a membership of 35, of which Dr. Chester H. Harroun, of Toledo, still survives and practices his profession, the history of this active, aggressive and progressive association has been one of uninterrupted success and usefulness. There are two other survivors of the charter members.

Fifty new members were added during the Toledo meeting, bringing the total membership up to 550, of which number 322 were registered in attendance, besides a large number of visitors, making the total attendance not far from 500.

Those in position to know assert that more dentists listened to the papers and took part in the discussion than at any other convention ever held in the state.

Exhibitors, of which the number was large, assert that they had better accommodations and were better satisfied with results than at any previous meeting.

The forenoon session of Tuesday was devoted to routine, to the address of welcome by Mayor Brand Whitlock, and the address by President W. A. Siddall, of Cleveland.

The afternoon session was occupied by the reading of a most excellent paper by Dr. J. V. Conzett, of Dubuque, Iowa, on "The Gold Filling,' which was ably discussed by Dean N. S. Hoff, of the Michigan University, and others. As a mark of appreciation for his excellent paper, Dr. Conzett was made an honorary member.

Following this paper, officers were chosen, as follows: President, W. G. Ebersole, Cleveland; vice president, F. M. Casto, Cleveland; recording secretary, C. D. Peck, Sandusky; treasurer, J. E. Phelps, Chagrin Falls; members of the executive committee, W. A. Price, Cleveland, chairman; J. K. Douglas, Sandusky; J. W. McDill, Cleveland.

At the evening session Dr. J. V. Stephan, of Cleveland, in the absence of Dr. Otto E. Inglis, of Philadelphia, Pa., read the latter's paper on "Some Uses of Core Casting in Dental Therapeutics."

The evening session was enlivened by one of Dr. J. W. Dowd's characteristic addresses on Oral Hygiene, with stereopticon illustrations, which was received with close attention, deep interest and abundant applause.

At Wednesday morning's session Dr. Clarence J. Grieves, of Baltimore, Md., read a paper on Bridgework, and Dr. C. G. Myers, of Cleveland, a paper on "The Cast Inlay." Able discussions followed the reading of both papers.

All papers and discussions will appear in future numbers of THE DENTAL SUMMARY.

The afternoon of Wednesday was devoted to the exhibitors, and to various forms of entertainment tendered to the visiting members and their ladies by local dentists and dealers.

Thursday was Clinic Day, 41 able and instructive clinics occupying the entire time. Almost every phase of dentistry was covered by men well equipped for the work.

The accommodations at the Hotel Secor were ideal, and all visitors unite in praise of the work of the local committee and others having the work of preparation in charge.

The selection of place for the 1911 meeting is in the hands of the new executive committee. If the expression of approval and satisfaction heard on all sides may be construed as indicative of the choice of the members, the convention next year will be at least a duplicate if it does not excel that of 1910, and it will be held—it most certainly should be held—at TOLEDO!

HOW OTHERS SEE IT

Cleveland, Ohio, June 19, '10.

The Ransom & Randolph Co.

Gentlemen:—The members of The Northern Ohio Dental Association wish me to thank you most heartily for the interest shown by you, and the efforts put forth, during our last meeting in your city.

Our meeting was a most decided success, and you had not a little to do with making it so.

I wish to convey to you the hearty good will of all our members.

With very best regards, I am

Very truly,
J. W. McDill, *Secretary.*

Cleveland, Ohio, June 19, '10.

Mr. G. E. Harter, Mgr.,
The Dental Summary,
Toledo, Ohio.

Dear Sir:—Our recent meeting in your city was a great success, and we feel that much credit is due you and The Dental Summary for the same.

The Society passed a vote of thanks to you, and I take great pleasure in forwarding it to you in this style.

I convey to you the hearty good wishes of all our members, which, of course, includes my own.

Very truly,
J. W. McDill, *Secretary.*

NOTES AND OBSERVATION

At the close of Dr. J. W. Dowd's address on Tuesday evening, he was unanimously elected an honorary member. This honor we feel to be well-deserved. Since taking up the lecture work, Dr. Dowd has conscientiously and earnestly applied himself to the no light task of acquiring the necessary technical and theoretical knowledge, and his talks have done the profession an immeasurable amount of good.

The accommodations provided by the Hotel Secor left nothing to be desired. All in attendance speak in highest praise.

The sight of so many members of the profession paying closest attention to papers and clinics most certainly was inspiring, and spoke in no uncertain tones of the future usefulness and progress of the association.

The exhibits were well arranged and attractive in appearance. Among the new faces were noted The Lavoris Chemical Co., Weisfield Bros., Ely Lilly & Co. Of course the "regulars" were all in attendance.

Any dentist who doubts the usefulness of Association work should attend the next meeting; his doubts and objections will be dispelled instanter.

SOUTHERN BRANCH NATIONAL ASSOCIATION

Houston, Texas, May 6.—With the election of officers tonight, the thirteenth annual meeting of the Southern branch of the National Dental Association, which has been in session in Houston for the past three days, was brought to a close with every delegate satisfied with the results attained and with the organization considerably augmented in numbers.

After the election of officers there was a banquet at the Rice Hotel. It was the crowning feature of the convention, and extensive preparations were made for it.

Public free school clinics for the teaching of sanitary care of the oral cavity was discussed several times during the convention. The association maintains a committee which has recommended that the association establish free clinics or dental offices in the most centrally located schools in the country, and a movement will be started to establish one of these schools in Houston.

Friday morning's session was devoted to the reading of several excellent, practical and scientific papers and to the discussion of these. Among the papers read were: "A Plea for the Porcelain Inlay," by Dr. L. P. Robertson of Marlin, Tex.; "Practical Therapeutics," by Dr. H. B. Holmes of Louisville, Ky.; "A Warning," by Dr. George S. Staples of Sherman, Tex.; "Some Things in Operative Dentistry," by Dr. J. E. Storey of Beaumont, Tex.; "Cavity Preparation," by Dr. H. M. Davison of Hubbard, Tex. Lengthy discussion was indulged in upon nearly all the papers read.

The burden of most of the discussion on Friday morning was on the respective merits of amalgam, porcelain and gold fillings and the preparation of the teeth for fillings, and the subject offered a field fertile of different opinions.

During the discussion Dr. George S. Staples of Sherman, Tex., regarded as the nestor of dentistry in Texas, was the happy recipient of a round of complimentary remarks, Julian Smith of Austin, past president of the Texas State Dental Association, and D. L. P. Robertson of Marlin, Tex., expressing the opinion that Dr. Staples had acted as a balance wheel for the too enthusiastic flights of the younger practitioners of the state.

New officers elected are as follows; President, H. Clay Hassel, Tuscaloosa, Ala.; first vice president, W. H. Sherer, Houston, Tex.; second vice president, J. D. Towner, Memphis; third vice president, H. N. Davidson, Hubbard City, Texas; treasurer, D. B. Brabson, Nashville, Tenn.; corresponding secretary, W. G. Mason, Tampa, Fla.; recording secretary, W. A. Dean, Tampa, Fla.; executive committeeman, J. P. Gray, Nashville, Tenn.

Selection of next meeting place and time left with executive committee.

The Northwestern Ohio Meeting

The last meeting of the year was held at the Lima House, Lima, Ohio, May 23, and was a most enjoyable affair. The meeting was a purely fraternal gathering, there being no formal program, those present speaking in the direction of the good of the organization as the spirit moved them.

Officers were elected as follows: J. K. Bannister, Lima, president; D. H. Morgan, Van Wert, first vice president; Francis Basinger, Bluffton, second vice president; J. W. Dimond, Lima, secretary; G. G. McCoy, Delphos, treasurer.

Following the election a most enjoyable dinner was served to the following, who were in attendance: Drs. Sullivan, Foust, Swan, Crawford, Gray, Jones, Bayly, Evans, Talford, Long and A. and J. W. Dimond, of Lima; Drs. Morrison, Morgan, Weisenberger, Ainsworth, Johnson and Hamilton, of Van Wert; Sherwood, of Ottawa; Killen, of Columbus Grove; Thatcher, of Bellefontaine; McCoy, of Delphos; Brunk, of Elida; Basinger and Ford, of Bluffton; Raudabaugh, of St. Marys, and Mr. Fred Miller, representing the dental supply house of Ransom & Randolph Co., of Toledo.

Kentucky State Convention

The following officers were elected at the convention of the Kentucky State Dental Association, May 27:

O. G. Wilson, of Franklin, president; M. H. Dailey, of Paris, vice president; W. M. Randall, of Louisville, secretary. J. W. Juett, of Eminence, and Chester Dorsey, of Bellevue, will be recommended to the Governor to be appointed on the State Board of Examiners.

An unusual feature of the meeting was the engagement of John W. Dowd, LL. D., the SUMMARY lecturer on Oral Hygiene, who addressed the dentists, school-children and teachers and the general public during the session. His lectures were largely attended, and the engagement is pronounced a complete success.

The Illinois State Convention

The Illinois State Dental Society closed its forty-sixth annual convention at Springfield, May 20, with the election of the following officers:

President, D. M. Gallie, Chicago; vice president, G. O. McCann, Danville; secretary, J. F. Waltz, Decatur; treasurer, C. P. Pruyn, Chicago.

Peoria was selected as the convention city for next year, May 9, 10, 11 and 12.

Before adjournment, resolutions were adopted thanking the Springfield dentists, the Chamber of Commerce, and city administration, for their work in making the convention a success from a standpoint of entertainment.

That Illinois should appropriate a fund for the maintenance of dentists whose sole purpose it would be to treat inmates of state charitable institutions is the belief of the legislative committee. To the end that such a project may get before the next general assembly, the committee in its report at the opening of the meeting recommended such an appropriation, and received the approval of the delegate body of the plan. Heretofore it has been the custom of the state to pay a dentist a small salary to attend to such work.

The Alabama State Convention

The Alabama Dental Association convened at Mobile, May 10, in forty-first annual meeting. A new constitution and by-laws were adopted and Montgomery was chosen as the next meeting place.

The following officers were chosen: President, Dr. F. H. Johnston, Sheffield; first vice president, Dr. W. M. Northern, Talladega; second vice president, Dr. A. K. Parks, Montevallo; secretary, Dr. E. W. Patton, Selma; treasurer, J. D. Allen, Selma; member examining board, George S. Vann, Gadsden; executive committee, Dr. H. B. Dowling, Ozark; press editor, Dr. H. J. Crossland, Montgomery.

The Missouri State Convention

The Missouri State Dental Society, at its meeting, May 26, voted Thursday evening to give $100 toward the $8000 fund for the memorial to be erected in Columbus, Ohio, in memory of W. D. Miller, discoverer of the "caries" theory of dentistry.

Officers were installed on the same day and an ivory and gold gavel presented to R. E. Darby, the retiring president. The Executive Committee selected officers as follows: Dr. J. T. Fry, of Moberly, treasurer, and Dr. S. C. Rubey, of Clinton, secretary, and the following Executive Committee: President O. J. Fruth, chairman; C. C. Allen, Kansas City; M. C. Marshall, J. H. Kennerly and F. F. Fletcher, St. Louis; M. R. Carter, Sedalia; H. S. Lowry, Kansas City; H. Boatner, Springfield; A. L. Bridgeford, Macon; W. B. Roberts, Carterville, and S. T. Cronkite, St. Joseph. Other committees and boards will be appointed later by President Fruth.

The Vermont-New Hampshire Convention

At a joint meeting of the Vermont and New Hampshire Dental Societies, which was held at Rutland, Vt., May 17, 18, 19 and 20, the Vermont State Dental Society, elected the following officers for the ensuing year:

Dr. A. Z. Cutler, Bennington, president; Dr. L. E. Mellen, Middlebury, first vice president; Dr. F. H. Brown, Enosburg Falls, second vice president; Dr. Harry F. Hamilton, Newport, secretary; Dr. W. H. Munsell, Wells River, treasurer.

Executive committee, Dr. Dana E. Dearing, South Royalton; Dr. Thomas Mound, Rutland; Dr. W. H. McGoff, Montpelier.

A pleasing part of the program of the evening session, May 18, was the presentation of a handsome loving cup by the Vermont society to Dr Geo. F. Cheney, of St. Johnsbury, one of its oldest members and a member of the examining board for many years. Dr. R. M. Chase, of Bethel, made the presentation in behalf of the society and Dr. Cheney, although completely taken by surprise, made a suitable response.

Many interesting and instructive papers were read and discussed. Twenty-four clinics and twenty exhibits enlivened the proceedings.

The Susquehanna Convention

The meeting of the Susquehanna Dental Association of Pennsylvania May 26, was one of the most successful ones in the history of the institution and the fact that the sessions were held at the Oneonta made the visit of the dentists from out of town particularly delightful

The officers elected are: President, Dr. V. H. Jones, Bethlehem; vice president, Dr. Fuller Davenport, Wilkes-Barre; recording secretary, Dr. E. J. Donnegan, Scranton; financial secretary, Dr. George Knox, Scranton · treasurer, Dr. C. C. Walker, Williamsport. The place of the next convention was not named but will be decided upon by the new executive committee to be appointed by the president.

The New York State Convention

The New York State Dental Association, which closed its annual meeting at Albany, May 7, elected these officers: President, A. R. Cook, Syracuse; vice president, E. F. Hellyer, Brooklyn; secretary, A. P. Burkhart, Buffalo; treasurer, M. O. Jewell, Richfield Springs; corresponding secretary, H. C. Ferris, Brooklyn. The association will meet in Albany next year.

The Tennessee State Convention

The Tennessee State Dental Association concluded the business of the annual session May 20, with the election of officers and transaction of miscellaneous business. The meeting next year will be held in Nashville. The new officers are: Dr. H. A. Holder of Gallatin, President; Dr. C. A. Tavel of Memphis, First Vice President; Dr. F. F. Meacham of Chattanooga, Second Vice President; Dr. J. L. Manire of Memphis, Recording Secretary; Dr. DeLan Kinney of Nashville, Treasurer; Dr. Walter G. Hutchison of Nashville, Corresponding Secretary.

The Louisiana State Convention

The Louisiana State Dental Association at the closing session of the 32d annual convention Wednesday afternoon, May 11, elected Dr. A. J. Richards, Plaquemine, president for the ensuing year. Morgan City was selected for the meeting place next year, Alexandria losing by one vote.

Following are the other officers elected: S. H. McAfee, New Orleans, and S. J. Bourgeoise, Baton Rouge, vice president; A. L. Plough, New Orleans, recording secretary; W. M. Miller, New Orleans, treasurer.

The following were elected to serve on the executive committee: W. C. Richardson, H. P. Magruder, L. D. Archinard, J. A. Gorman and E. J. Zeidler, chairman.

The following councillors were elected: J. C. Crimon, First District, New Orleans; W. Ernest Walker, Second District, New Orleans; J. R. Oliver, Third District, Alexandria; P. E. Tanner, Fourth District, Shreveport; W. C. Wren, Fifth District, Ruston; N. H. Williams, Sixth District, Hammond; H. H. Hawsey, Seventh District.

Preceding the election of officers, and consuming most of the afternoon session, was a discussion growing out of the publication in *The States* last Sunday of an article on pyorrhea, accompanied by the pictures of Drs. Ramelli, Belden and Sarazin, members of the committee to investigate the disease. The publication of the article in question was charged by some of the dentists to be a breach of ethics. Upon showing that the article was merely a newspaper account written by a representative of the paper, and not an article given out for advertising purposes, the matter was dropped.

The convention closed with a banquet Wednesday night in the Grunewald Hotel.

WHOLESALE DENTAL ROBBERIES

The Profession Being Victimized by Clever Thieves Who Accept the Invitation of Unwise Dentists

The Long List Grows Longer Month by Month—Strangers Made Welcome as Grip-Sackers and Repair Men, Levy Heavy Toll. Look at the List—Some Portraits Worthy of Study.

The robbing of dental offices has become so easy, such a matter of course, that the self-respecting "professional" is likely soon to turn it over to his understudy as common, everyday picking, confining his own efforts to banks, grave-vaults and other foemen more worthy of his steal.

The Dental Summary asks, urges, every one of its readers to intelligently peruse the list that follows; then read every word of comment; then study the photographs appended; then determine that the next stranger that blows into the office, with grip-sack or repair kit, to "look over your outfit, doctor, and fix you up," is invited to try the competitor across the street.

Here is the record of the monthly harvest:

Cleveland, Ohio: Eighteen offices in the Rose building entered and robbed during Saturday night and Sunday, June 5 and 6.

The offices were entered by forcing a knife or spatula through the molding of the door and forcing the lock back. There was very little money lost, the largest part of the booty was bridges and crowns, scrap gold, etc. No offices were entered in which there were safes, nor any specialists' offices visited. On the 9th floor they did not go down one hall-way at all, as one of the dentists was working in his office on Sunday afternoon and this is probably the time the thefts were committed. Following is a condensed list of the doctors who were robbed:

Dr. D. H. Zeigler, E. J. Douhet, J. B. Sapp; Dr. W. H. Johnson, $50 in scrap and work made up; Dr. J. M. Saum, $50 in crowns and bridges; Dr. A. H. Sherrick, $25 gold, $90 worth of work made up; Dr. P. O. Parsons, $50 scrap gold and $50 of finished work; Dr. A. L. Parsons, $30 gold scrap; Dr. C. N. White, gold scrap and work to the amount of $50, also $15 in cash and several pieces of valuable old jewelry which were heirlooms; also gold watch; Dr. A. L. Griffis, between $75 and $100 gold and finished work; Dr. H. C. Kenyon, gold and stamps to the amount of $15; Dr. H. H. Dowd, $12 scrap gold; Dr. A. J. Husband, between $30 and $40; Dr. A. J. Linsey, entered the office but did not get anything; Dr. E. B. Lodge, entered through two doors with Yale locks, broke open roll top desk with jimmy and took about $12 in materials and $15 in gold scrap, bridges, etc.; Dr. J. C. Curry, $50 gold and $100 finished work; Dr. P. H. Keese, $20 gold plate, some finished work; Dr. D. B. Ford, $25 gold scrap; left 8 crowns made up.

Dayton, Ohio.—Seventeen dentists robbed in a most systematic manner between Saturday night and Monday morning, June 5 and 6. Value of plunder, nearly $1,000. As usual, the work was done by experts; also, as usual, the police have no clue.

According to the best information obtainable the supposed thieves made the rounds of the large office buildings during the day thus securing a "line" on the offices.

Emerging from an office in the Hollencamp building about 10 Sunday night, a well-known resident of the city encountered two men in the hallway. One darted into a toilet room, while the other approached and inquired who had charge of the rental of offices.

Descriptions of the caller and the man in the Hollencamp building are meager, but tally. He was about 5 feet 8 inches in height, well dressed in dark clothing, and wore a derby hat. He was smooth faced. No description was furnished of the other.

Here are the victims: Dr. H. A. Penfield, $75; Dr. D. G. Porter, place broken into, nothing taken; Dr. Z. N. Wright, $85; Dr. R. E. Flory, $40; Dr. O. B. Kneisley, not estimated; Dr. Warner, not estimated; Dr. A. J. Hibschman, $3; Dr. L. Walter Wright, $50; Dr. L. O. Addison, $125 (overlooked watch); Dr. G. A. Billow, $75; Dr. H. G. Spitler, $25; Dr. H. A. Hubbard, $25; Dr. W. H. Sells, $35; Dr. L. C. Weimer, $55; Drs. W. E. and E. B. Tizard, $74; Dr. W. D. Long, $12; Dr. Rowland, $50; Dr. C. A. Lehman, $268, including gold, silver and platinum, and a lady's gold watch which belonged to his mother; Union Painless Dentists, $25 in gold; Dr. J. A. Sinnett, $20.

Portland, Me., June 19.—To Whom it May Concern: The following goods were stolen from dental offices on the night of June 7: 500 loose teeth, valued at about $75; gold stock worth $50; several phials of gold pellets, valued at $2.50 per phial; four or five books of gold foil, worth $4 per book. If offered for sale, notify nearest police officer to arrest person offering same, and wire at our expense.

Walter H. Dresser, Chief of Police.

Other Losses

Birmingham, Ala.—Dr. D. F. Florence. Amount not stated.

Atlanta, Ga.—Drs. Delos Hill, R. F. Ingram and Barrett & Barnwell. Gold and platinum; $100. Dr. Benjamin Wildauer escaped heavy loss by sheer "luck." The thieves entered his office, and were prying open a drawer in his cabinet containing goods to the amount of several hundred dollars, when they were frightened away. No clue.

Butte, Mont.—Drs. Carpenter, Toole and DuPree. Large quantity of gold-leaf. No clue.

Columbus, Ga.—Every dental office in the Masonic Building was entered June 5, and several hundred dollars' worth of gold stolen. Six offices were robbed.

New York City.—Dr. Manuel Brazill, June 6. Gold and sets of teeth, $125. Expert work.

Gadsden, Ala.—Drs. J. H. Walker and R. F. Thornton, May 31. Gold and instruments. Experts.

Washington, D. C.—Drs. Emmet M. Carter, Bruce L. Taylor, F. B. Brightwell, L. B. Eslin, Jas. B. Elzey, C. C. Galloway, W. C. Kellinger, Joseph N. Myers, Thos. J. Rice and Allen S. Wolf. Gold and instruments, about $300. Experts; no clue. May 8.

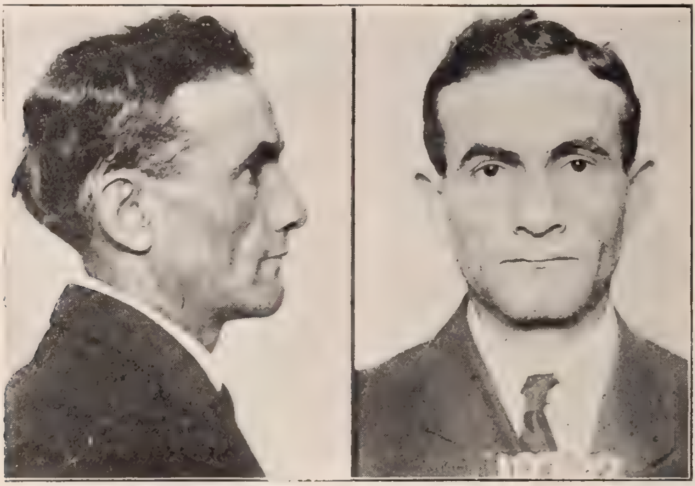
Mattoon, Ills.—Dr. S. A. Campbell, $500. This was a daylight affair. It seems that a traveling man, the proverbial "grip-sacker," entered the office about nine o'clock, and, while endeavoring to sell Dr. Campbell some special "materials," a confederate ransacked the laboratory. Moral: Buy materials from KNOWN representatives of reliable houses only. Otherwise, "angels" may be entertained unawares.

Buffalo, N. Y.—Dr. W. O. Bates, May 22, $50. The police are "investigating;" no clue.

Minonk, Ills.—"Dental Parlors," $50. No clue.

And so the story runs on, month after month. If all the details were known, it is probable that it would be found that most of the dentists were accessories to their own robbery, through carelessness or thoughtlessness.

In addition to the robbery of individual dentists, dental supply houses are heavy and continuous losers. In this connection the following should be interesting to all dealers and dentists:



WILLIAM R. JENKINS.

The Police Departments of all large cities have on file the following description of this man, whose portrait appears above.

Description: Age 32 years; weight 149½ pounds; height 5 ft. 8⅝ inches; complexion, medium dark ruddy; hair, medium chestnut; eyes, hazel. Scars and marks: No. 1. Two irregular cic scars on hand; No. 2. Same as number 1; No. 3. Large irregular cic at M. L. center of forehead; cic scar at root of nose.

Bertillion Measurements: Height 74.4; O. Arms 84; Trunk 94.0; H. L. 19.7; H. W. 16.0; C. W. 14.0; R. E. 6.4; L. F. 25.4; L. M. F. 11.5; L. L. F. 8.8; L. F. A. 48.9.

He was arrested by the police department of San Francisco, California, on May 3, 1909, having in his possession a quantity of dentist's gold, teeth, etc.

He is suspected of being implicated in several of the larger operations of recent dates, and is now awaiting sentence at Grand Rapids, Mich., as the following corespondence will show:

Toledo, Ohio, June 15, 1910.

Chief of Police,
Grand Rapids, Mich.

Dear Sir:—I understand that you have recently placed under arrest a man who was caught robbing a dental office. From what I have heard I am inclined to believe that this party is Wm. R. Jenkins, picture and description of whom is enclosed herewith.

Information concerning this man is no longer desired by the A. D. T. A. nor by The H. G. Fitzgerald Co. as stated in the circular, but I am sending the circular to you with the thought that through the information it contains you may find out something of his previous history.

Just recently the dental offices of The Rose Bldg., Cleveland, Ohio, were robbed, just previous to which time several dental offices in Dayton, Ohio, were robbed and it may be possible that this man had something to do with that work.

Yours truly,

C. S. Bigelow.

OFFICE OF SUPERINTENDENT OF POLICE,

Grand Rapids, Mich, June 16, 1910.

C. S. Bigelow,
Toledo, Ohio.

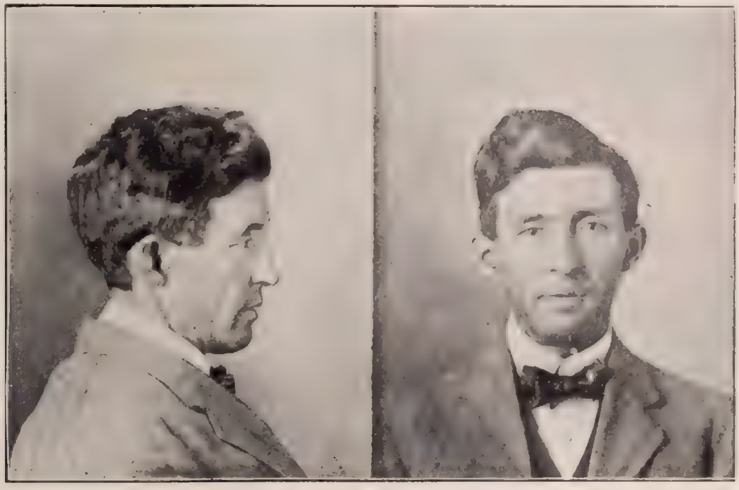
Dear Sir:—In reply to yours of the 15th. The man Jenkins, whose picture is on the circular you sent me, is the same person arrested by this department last Sunday afternoon after he had looted fifteen or sixteen dental concerns. We caught him with the goods on him; complaint has been made and he has pleaded guilty to the charge of larceny from an office in the day time and is now awaiting sentence.

I had received circulars in reference to the robbery of the dental offices in Dayton, but of course this fellow denies having had anything to do with it, although I think he is the person who did the work there.

Very truly yours,

Harvey O. Carr.

Superintendent of Police.



JAMES W. KEMP, alias HARRY LEE, alias GEORGE HARRIS, alias TRACY.

This gentlemen, "Kemp," "Lee," "Harris," "Tracy," take your choice, is suspected to have known more than the law allows about several robberies of dental depots during the past year, recently was released from the Columbus, Ohio, jail. Soon afterward he was seen in Richmond, Va., where a dental depot was robbed simultaneously with his visit; New Orleans is said to have been the next place favored by a visit from him, where he was arrested. Unfortunately the evidence against him was insufficient to make a case, and he was released.

Description: Age 38 years; weight 132 pounds; height 5 ft. 7 or 8 inches; slender build; dark chestnut hair; eyes, No. 1 slate blue; complexion, dark. Scars and marks: No. 1. Two vaccination scars of 2½-3c and 2c 8-10c ab elbow-outer arm; No. 2. Irregular scar of 1c at 19c ab wrist-outer fore-arm; little finger partially stiff; No. 3. Irregular scar of 1½c at right side of neck, 2c below jaw; No. 4. Large varicose veins on legs.

Bertillion Measurements: Height 70.0, Outs 74.0, Trunk 89.9; Head length 19.0; Head width 16.0; Cheek 14.6 plus; R. Ear 5.9; L. Foot 25.8; Mid. f. 8.8; Fore Arm 45.9.

Kemp, alias Lee, alias, etc., gives his place of birth as Holly Springs, Miss., and occupation as Dental Instrument Expert. He has served two years in the Kansas State Penitentiary under the name of Harry Lee on a charge of Burglary and Larceny, being discharged on August 29, 1902.

Men of this stamp are especially dangerous because they are intelligent, present no unusual appearance, are able to assume almost any character and to deceive strangers readily.

Visits from strangers, posing as traveling men, repair experts, inspectors, etc., should be discouraged in every possible way. By refusing to do business with strangers dentists may protect themselves from heavy loss.

Do not allow gold and platinum scrap to accumulate. Send it to your supply depot and get credit for it.

One significant point noted in connection with most of the reports is that offices equipped with safes are seldom visited; or, if visited, no attempt is made to crack the safes.

Portland Dental Society Secures Appropriation

At the annual meeting of the Portland Dental Society, held June 4 in the offices of the County Dental Society, the committee appointed to see the city authorities in an effort to obtain $1000 to help defray the expenses of examining the public school children's teeth, reported that the requisite sum had been donated. This committee was re-appointed for another year. They are: Chairman, A. L. Baty; Millard Holbrook, Edward Hirstel, E. A. Meyers and George Marshall. It was also decided at the meeting that the society will establish a dental chair for the worthy poor of the city, all the work to be done free of charge. This chair will probably be installed in September. Officers elected last night were: President, E. C. McFarland; vice president, E. A. Meyers; secretary and treasurer, C. M. Harrison; sergeant-at-arms, Treve Jones, Executive Committee, W. C. Adams and J. E. Nelson.

Dr. E. S. Holmes Deservedly Honored

The E. S. Holmes Dental Club, organized in April, held its first regular meeting May 27, and gave a dinner in honor of its sponsor, Dr. E. S. Holmes, the dean of the profession in Grand Rapids, and one of the oldest practitioners in the state.

Dr. Holmes is 90 years of age and retired from active work about four years ago. He was president of the State Dental Association 40 years ago and a feature of the meeting was the reading by Dr. Studley of a paper read by Dr. Holmes before the state association at that time. In it Dr. Holmes predicted many improvements in the practice which are now comparatively common.

About 40 dentists were in attendance. Dr. Holmes was presented to them by Dr. E. L. Owen, after which he was made a life member of the organization and presented with a purse of $50 in gold, in recognition of his ability and appreciation of what he has done for the profession.

Dr. Holmes since his retirement has ably assisted Curator Sargeant of the Kent Scientific Museum, putting in much time there. Dr. J. D. Locks is president of the club, Dr. W. H. Gibson secretary and Dr. Dennis Murray treasurer.

New Offices of the Pennsylvania Odontological Society

Officers elected at the annual meeting of the Odontological Society, held at the Monongahela House, Pittsburg, Pa., April 12, 1910 are as follows:

President, Dr. B. M. Loar, Mount Pleasant, Pa.; vice president, Dr. Chas. E. Peters, Pittsburg, Pa.; secretary, Dr. King S. Perry, Irwin, Pa.; treasurer, Dr. M. S. Burns, Sewickley, Pa. Board of Censors, Dr. W. S. Cook, Beaver Falls, Pa., and H. F. Koontz, H. C. Neale, Pittsburg, Pa. Librarian, Dr. A. C. Barclay, Pittsburg, Pa. Auditors, Drs. R. M. Erwin, H. F. Koontz, Pittsburg, Pa. Dental Literature, Drs. W. L. Fickes, W. A. McGrady, F. H. Magill, J. H. Robinson and H. D. Best. Program Committee, W. W. Booth, J. H. Crawford and O. L. Hertig. Membership Committee, S. M. Stauffer, A. W. McCallough and W. A. Kelly.

Dr. C. D. Lucas New President of the Indiana State Association

C. D. Lucas of Indianapolis, formerly vice president of the Indiana State Dental Association, was elected president of the organization at the meeting May 18. C. E. Redmond of Peru, former treasurer, was elected vice president, and Otto U. King of Huntington, was re-elected secretary for his third term. The SUMMARY congratulates the Indiana association on these excellent selections.

LISTERINE

The best antiseptic for a dentist's prescription

As a daily wash for the preservation of the teeth, and for maintaining the mucous membrane of the mouth in a healthy condition, Listerine occupies a first place in dental and oral therapeutics. Listerine is truly prophylactic, in that it exercises an inhibitory action upon the acid-forming bacteria of the mouth, and thus maintains the alkaline condition so necessary for the welfare of the teeth.

LISTERINE TOOTH POWDER

An innovation, in that it possesses neither fermentative nor harshly abrasive ingredients, Listerine Tooth Powder very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouthwash of Listerine, suitably diluted.

¶The undersigned will be pleased to send supplies of Listerine Tooth Powder samples for distribution to patients, upon receipt of the dentist's professional card, and this advertisement.

Lambert Pharmacal Co., St. Louis, Mo., U. S. A.

Antiphlogistine
TRADE MARK

We are constantly receiving from dentists all over the country testimony to the value of Antiphlogistine in their practice. They use it in all cases of inflamed gums and jaws, and their unanimous testimony shows that a beginning inflammation is resolved while an abscess is always localized, so that it can be opened from inside the mouth. It may be used directly to the gum and on the outside of the face at the same time.

Send for Booklet

The Denver Chemical Mfg. Co.

New York.

Patents Pending

By drawing the bottom cup another comes into position automatically

Aseptic Paper Cups for the Dental Profession

Notice the New Reinforced Bottom Cup

and the new way of packing them in cartons of 25 each, or 100 to the box.

The Dental Cup Bracket

holding 25 cups, is installed handy to the chair, making it very convenient in serving the individual cup.

Patients are not guessing about this cup being sterilized, as they are the common glass.

Hold water at 112o.
Hygienic, Dainty.

Patents Pending

MANUFACTURED BY

American Water Supply Co. of N. E.

251 Causeway St., Boston

Toothless since infancy and living for thirteen years without ever partaking of solid food, is the unique experience of little Mary Strode, daughter of Mr. and Mrs. Bertie Strode, of Monroe county, near Glasgow, Ky. The child had never been able to eat anything which required mastication and had lived on soups. Recently a local physician decided to make a full set of artificial teeth for the little girl and to try if possible to persuade the child to use them. She is now enabled to take her place at the table and eat anything the rest of the family enjoys.

Dr. Frank Rule, of Clyde, Ohio, sailed May 21 for Bombay, India, where he goes to practice his profession on a three-to-five-year contract. He expected to reach his destination on June 17.

The W. D. Miller Dental Club of Pittsburg was organized in December, 1909, with the object of promoting the educational interests of its members. Dr. Joseph N. Katz, 1317 Fifth Avenue, Pittsburg, is secretary.

Dr. Ferdinand Gorgas, dean of the dental faculty of the University of Maryland, handed diplomas to 55 graduates at the commencement exercises held June 1. The total list of graduates of the institution was 240.

While testing a vulcanizer, May 19, in the office of H. A. Hamm, at Granite City, Dr. E. C. Beck, a dentist, was scalded by the boiling water which splashed on his face and hands. He was sent to St. Louis for treatment.

Dr. F. F. Drew, Baltimore, who has been a member of the Maryland Board of Dental Examiners for 12 years, eight of which he has been secretary of that body, has been reappointed for another term of six years by Governor Crothers. The Governor also reappointed Dr. W. W. Dunbracco a member of the board for another term of six years.

In an action for $25,000 damages against Dr. Frank W. Cady, of Rochester, N. Y., a dentist who was alleged to have broken the jaw of a five-year-old girl in extracting a tooth, the jury awarded a verdict for $6,000.

Dr. George B. Saxemeyer, Jersey City, was recently convicted and fined $50.00 for practicing without a license. He is a graduate of the University of Pennsylvania.

DEATHS

Dr. Roswell Otis Stebbins, Arctic explorer, traveler, chairman of the Executive Committee of the Arctic Club of America at the time of the Cook-Peary controversy, doctor of medicine and dentistry and friend of the discredited explorer, died in his home in New York City, May 24, from Bright's disease.

Dr. Stebbins was born in Wetumpka, Ala., in 1855. He obtained a degree of surgery in Alabama and about thirty years ago went to New York. After a few years he decided to take up dentistry, and became a graduate of the New York College of Dentistry. He gradually dropped his medical practice, and for many years he has been recognized as one of the foremost dentists in the city.

In 1878 he explored the south fork of King's River, Sierra Nevada. He became a member of Dr. Frederick A. Cook's expedition to Greenland in 1884, and was also a member of the Mount McKinley expedition. He also explored parts of Central America. In his expedition to Greenland he obtained casts of the teeth of Eskimos, which he presented to the National Medical Museum.

Dr. George H. Mead, retired, Lebanon Springs, N. Y., May 16, aged 88.

Dr. W. G. Fuller, Unity, Me., May 6, aged 70. Dr. Fuller was compelled by failing health to retire two years ago, up to which time he had a very large practice.

Dr. William Z. King, Oakland, Cala., May 7. aged 61. For twenty years Dr. King was Secretary of the California State Board of Dental Examiners. He was one of the pioneer dentists of the state, having practiced more than forty years, retiring only a short time before his death, on account of failing sight.

Dr. Harry S. Sanders, Wilkes-Barre, Pa., May 24, aged 36.

Dr. Louis Stanford Hyatt, Connellsville, Pa., June 3, aged 44. Dr. Hyatt was one of the best known dentists in his vicinity, and had just returned from a southern trip, taken in search of health.

Dr. Barney A. Mosbey, Huntingburg, Ind., May 26. He had been in practice about twenty years.

Dr. William C. Nesbitt, Mt. Sterling, Ky., June 6, aged 59.

Dr. Charles Henry Firman, Elmira, N. Y., June 1, after an illness extending over a period of fourteen years, during all of which time he practiced his profession with the exception of the last five months. He was widely known and greatly beloved.

Dr. James A. Calhoun, Pittsburg, Pa., May 22, of pneumonia, aged 58. He had practiced in Pittsburg 20 years, and was widely known as an advocate of prohibition.

Dr. G. C. Keel, aged 39 years, died Sunday afternoon, May 8, at his home, Newcastle, Ind., after an illness of a week, of pneumonia. It was the second attack in the past few months and his constitution was not sufficiently strong to withstand it. He is survived by his wife. The remains were taken to Ft. Wayne, his former home, for burial.

Dr. C. H. Darby, of St. Joseph, Mo., one of Missouri's most prominent dentists, died at his home, on May 14, age 67 years. His widow was the wife of the late Bishop Hawk, first Protestant Episcopal bishop of Missouri.

Dr. Moses Ward Carter of Belleville, said to be the oldest practicing dentist in the State of Ilinois, died at his residence, Belleville, Ills., of heart trouble, May 10. He was 85 years old, but was at his operating chair until a few weeks ago. He was a relative of Daniel Webster.

Dr. Harry Schindel Saunders, Wilkes-Barre, Pa., May 22, aged 37.

Dr. A. B. Thompson, Metamora, Ohio, is not paying his usual close attention to professional matters just now. But then, there's a very good reason for this temporary neglect. He was married on the evening of Thursday, June 16, and is busy adjusting himself to his new relations. The Doctor and his wife have our best wishes for a happy and prosperous voyage through life.

In an article in the July *American Magazine* Ray Stannard Baker says of Mr. Taft:

''Lincoln laid down the law, and uttered the clarion note of leadership in words that cut like a sword through the confused but none the less passionate popular emotion on the slavery question, when he said: 'This nation cannot exist half slave and half free,' and when he said to the Southern disunionists, 'We won't go out of the Union, and you shan't.'

''But we have heard nothing clear, nothing sure, nothing strong, from Mr. Taft—and the country drifting, drifting toward a crisis.

''When at his famous speech at Cooper Union in February, 1908, a man in the audience put to him the most poignant question of this age, 'What is a man going to do who is out of work and starving?' Mr. Taft replied: 'God knows, I don't.'

''And this is Mr. Taft; a leader without an answer for his times. 'God knows,' or Roosevelt knows, or the Supreme Court knows—I don't.

Dr. Edward Bartlett Spalding and Miss Grace Pearl Rogers announce their marriage on Saturday, June 18, 1910. Dr. Spalding and his bride have the best wishes of The Summary and a host of friends of both.

Dr. Frederick F. Cloud, of New York City, has removed his office from No. 67 West 23d street to No. 47 West 34th street, the Marbridge Building, opposite Macy's, Herald Square, room 524. Broadway entrance, No. 1328.

MOST men are agreed that the proportion of good and evil in life may be very sensibly affected by human action. So far as we possess a power of bettering things, it is our paramount duty to use it, and to train all our intellect and energy to this supreme service of our kind.

—*Thomas Huxley.*

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX AUGUST, 1910 No. 8

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The Virginia State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society
and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. Bethel, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address	District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.	Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple	Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland	D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Kansas City	Dr. Martin Dewey, Argyle Bldg.	Louisville	Dr. H. B. Tileston, Equitable Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe Sts.	Memphis	Dr. D. M. attell.
Los Angeles	Dr. B. Frank Gray, Security Bldg.	Atlanta	Dr. Thos. P. Hinman, 4th Nat. Bank Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.	N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Detroit	Dr. [illegible] B. Spalding, Gas Office Bldg.	Richmond	Dr. F W. Stiff. 600 E. Grace St.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"	New York City	Dr. W. H. Sieberst, 1 W. 34th St.
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.		

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, in U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

THE TREATMENT OF INACCESSIBLE ROOT CANALS*

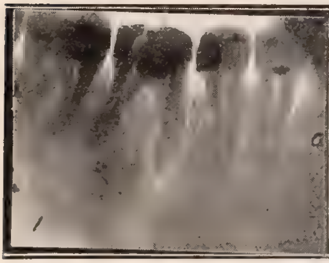
By M. L. Rhein, M. D., D. D. S., New York, N. Y.

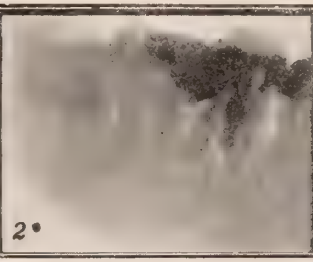
Lecturer on Dental Pathology, Department of Dentistry, University of Pennsylvania

JUDGING from dental literature, the problem of treating inaccessible root canals is unsolved by the majority of dentists. The paper by Dr. A. D. Kyner, read before the Illinois State Dental Society in May, 1909, and published in *The Dental Review* for October, together with the recent extensive work on this subject by Professor B. Mayrhofer, of Innsbruck, demonstrate the apparent futility of leaving the attenuated root canals in a sterile condition. Prof. Mayrhofer presents a very powerful argument in favor of the necessity of leaving the canals in such condition as will make it impossible for infection ever to occur in this region. In this respect, it has become the popular thing to quote from Prof. Webster, of Toronto, that "from experiments and observations of fully 20,000 attempts by students, I believe it impossible to remove all pulp tissue from all roots." The great error in Prof. Webster's conclusion lies in its deduction being based on the work of students. There is no operation in dentistry where the skill and accurate knowledge of the anatomy of the different roots, acquired by experience, counts for so much. Every operation of this kind properly performed should increase the skill of the operator for the next one of a similar nature. The impossibility of preventing the loss of large numbers of teeth in the dental infirmary, due to the necessity of the student acquiring such experience, is well recognized. The only remaining basis for this popular quotation is the number of anatomical irregularities of roots, which present curvatures so marked, that no means are available for reaching the ends of such canals. It has always been impossible to agree upon the percentage of such cases as such knowledge is necessarily based on the intelligence and skill of different operators. Five percent. appears to more than cover the proportion of such cases in the hands of those men who have a keen appreciation of the means of reaching the ends of all canals. Even twice such a percentage of failure should place the operation on a basis where it compares favorably with all other operations in conservative dentistry.

---

*Presented at Ohio State Dental Society, 1909.





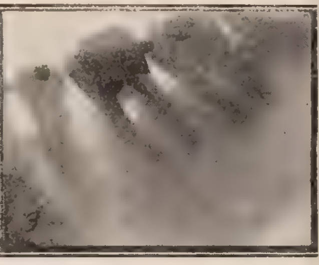


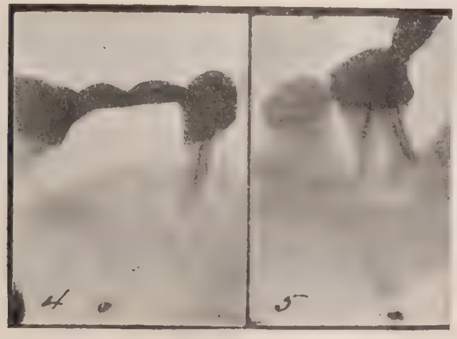
Fig. 1.—Abscessed lower first molar showing abscess around the ends of mesial roots.

Fig. 2.—Abscessed lower first molar showing abscess around the mesial roots; operator failed to find mesial canals and drilled between the roots and forced large mass of gutta percha through the opening (dark mass plainly seen in picture). Patient, man about 50, temp. 102 F., foul, fetid odor of pus. Tooth was extracted—two weeks later impacted third molar which was thus accidentally disclosed was also extracted.

Fig. 3.—Lower first molar showing characteristic curvature of mesial roots. Attempt to remove pulp; failure mainly due to inefficient means of access to mesial roots. In effort to follow mesial canals reamer evidently passed through side wall through which is seen passing gutta percha point.

The trite old remark that the foundation must be sound if the superstructure is to be permanent was never more applicable than when applied to the treatment of root canals. Accepting the *dictum* that every effort must be directed towards maintaining the roots and contiguous parts free from infection, the treatment of inaccessible root canals can only be efficiently carried out by making these canals accessible. This statement is made at the outset because every other means that has been used to preserve pulpless teeth in a healthy condition has failed.

There is no difficulty in removing the pulps of single rooted teeth, of all double rooted bicuspids or of the lingual roots of upper molars, or of the distal roots of lower molars and following the canals of such roots to their very ends. The trouble has been in cleansing to the apices the buccal canals of upper molars and the mesial canals of lower molars. To leave undisturbed the contents of these canals, pulp amputation was attempted years ago and proven to be a failure. Since then, the doctrine of pulp mummification has been exploited by many men, among whose number the renowned Miller is ranked. It merely required the prestige of distinguished men to attract innumerable converts to a method of practice that would render easy the most difficult operation in dentistry. The able review of this false doctrine is so well presented by Dr. Kyner in the October number of *The Dental Review* that I simply refer you to this article rather than to take up your time in demonstrating the absolutely worthless character of this form of procedure. It might be well to add that the percentage of bad results from pulp mummification is very inaccurately described by Dr. Kyner as there is no good ground for his assuming that cases so treated are a success because no apparent trouble has ensued. Had all these cases been examined a couple of years later by means of radiography, the number of dormant abscesses at the ends of such canals would be a very surprising addition to the inadequate data which has been furnished us on this subject. This can only be appre-



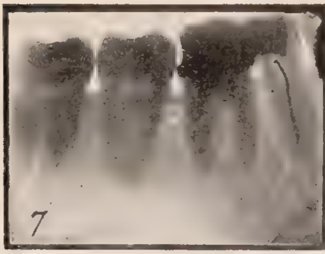
Figs. 4 and 5.—Case of supposed pyorrhea alveolaris of abutments of a lower fixed bridge. Gutta percha points forced through sides of canal of bicuspid and mesial roots of molar, showing, however, correct filling in distal root.

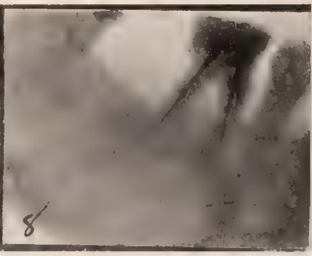
Fig. 6.—Lower first molar with characteristic curve to mesial roots, showing the impossibility of cleansing these canals through the pulpal opening which has been made.

ciated at its full value by those who are making constant use of the radiograph in root canal work.

All the old methods of treating root canals have been empirical and have shown such a large percentage of failures that the average dentist undertakes them with a feeling of fear and trepidation. Every attempt made to establish work of this kind on a strictly scientific basis has met with a very cold response from the profession at large. This is mainly due to two reasons. The first one is spoken of by Dr. Kyner in the following words: "To the dentist, I need but remind you that impaired vision must be the price of attempting to locate pulp canal openings in the uncertain light in the posterior part of the oral cavity, and the intense nervous concentration necessary to the manipulation in small inaccessible canals, cannot be exercised without its cost."

I disagree entirely with this assertion because thirty years of constant labor in this direction have shown no effect on the impairment of my vision and I know of no operation that gives such a delightful result of exhilaration as the successful attainment of having reached the ends of these attenuated canals. The second reason is a more weighty one and that is the great expense incurred by the patient in having these small canals properly cleansed. It is difficult to know how to answer this question satisfactorily because the secret of success in these cases rests on the patience of the operator and the utilization of all the time necessary to accomplish the desired end. There is no operation where the dentist is so well entitled to payment for all of the lengthy period that is so often neccessary to successfully accomplish a proper result. By attaining success, the tooth is preserved indefinitely in a state of health. When this is not accomplished the tooth may be frequently preserved for a lengthy period. Oftentime, patient and operator are deceived in the idea that the tooth is in a healthy condition when the radiograph will show latent abscesses at the ends of these roots. Such pathogenic conditions





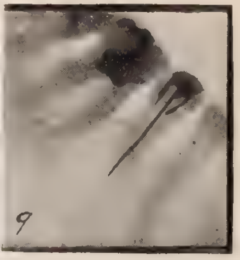
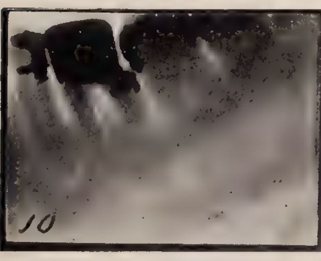


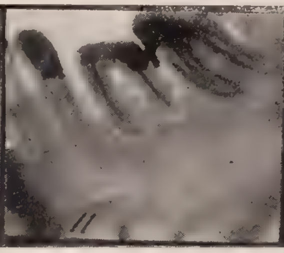
Fig. 7.—Gold wire in canal of second lower bicuspid in order to determine how far canal has been explored. Incidentally shows first molar in which canals have not been cleansed, although they are remarkably straight.

Fig. 8.—Lower first molar with wires in canals for diagnostic purpose. One mesial canal open about half way while the other one has been successfully cleansed.

Fig. 9.—Lower second bicuspid with wire in canal for diagnostic purpose. Imperfect treatment of adjoining molar.

cannot be present without draining the vitality of the patient. They mean a continual absorption of infected matter into the system and this produces more or less constitutional disturbances. They increase the severity of any chronic disease that may be present. In time they bring about a debilitation of the system which expresses itself in many diverse methods and generally prove a puzzle to the ablest medical diagnostician. Consequently, it is not saying too much to assert that unless the roots of pulpless teeth can be kept free from infection, it is better for the general health of the patient to have such teeth extracted, rather than to preserve them at the cost of the ultimate break-down of the health of the patient. Much as I would desire, the short time allotted to me prevents me from going into the details of the different methods of handling root canals and the futile attempts made to render them free from future infection. Many investigators have taken up this subject in the same form as Prof. Mayrhofer and have claimed the impossibility of obtaining sterility of the canals. This does not by any means prove that such canals cannot be placed in an ideal condition, free from any possibility of bacterial habitation. All that is needed to accomplish this result is a rational and scientific method of cleansing the canals of all organic matter and of hermetically sealing them without resulting irritation or secondary infection.





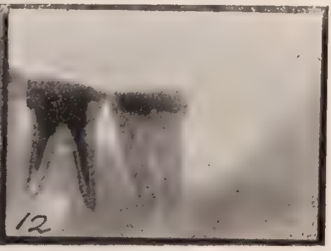


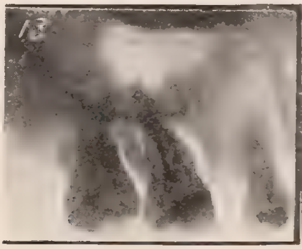
Fig. 10.—Fig. 10 shows badly abscessed condition around first and second lower molars, chiefly emanating from the first molar from which the pulp has been imperfectly removed and over which a very imperfect gold shell crown has been cemented. The wretched adaptation of the distal approximate side must have had much to do with the death of the pulp in the second molar.

Fig. 11 was taken after the pulp has been thoroughly removed from the second molar. The abscessed condition had been cured. The root fillings of gutta percha in the second molar are well shown and the stage of operation on the first molar has been reached where wires have been placed in the canals for diagnostic purpose.

Fig. 12.—Lower first molar showing correct root filling where end of necrosed mesial roots have been amputated.

This has been the aim of the writer for more than twenty-five years and while for the first few years the neccessity for frequent improvements of technique were made imperative, for the past sixteen years one technique has been satisfactorily carried out. The general outlines of this were published in a paper in *The Dental Cosmos* for October, 1905, but it seems to have met the fate of all publications that do not tend to make the labor of the dentist lighter. Let it not be construed from this that this form of technique has no following, because it would be unjust to the few hundred advocates from whom I received enthusiastic letters. It is, however, exceedingly disappointing that this paper failed to receive the public attention which it warrants. It is not my intention to repeat the details of that paper, (copies of which can be obtained for the asking) but I will merely summarize the principles involved.

The pulp chamber should be invariably opened to such an extent as to make accessible the entrances of every canal. This is the first shoal on which most dental barks are wrecked. From the absurd pin-hole opening to any compromise short of having the broach enter the canal in a straight line to the apex is only an invitation to failure. What value has a crown on an unhealthy root? Conservative dentistry makes it possible to replace the crowns of teeth in an artificial manner so as to last indefinitely provided the root itself is free from disease. It is consequently a primary necessity to eradicate from the mind of the dentist this antiquated notion of saving tooth structure at the risk of the health of the root. It is far better to entirely remove every vestige of a strong sound molar and leave the root canals in a healthy condition, than to preserve such a tooth with hibernating abscesses at the ends of the small roots. When the dental profession, as a whole, once reaches the period of evolution where it can properly grasp the value of this fact, the solving of this problem will become an easy matter. It may be of interest in this connection to call your attention to the following fact. It would seem most probable that in molars where the pulps die, or where ineffectual attempts to remove the dead pulps have been made, that any resulting abscesses would be more apt to be found at the ends of the lingual root in the upper molar and the distal root in the lower molar, because in these two roots there is so much greater quantity of pabulum for bacterial propagation. Yet such is not a clinical fact, since by far the greater number of alveolar abscesses are



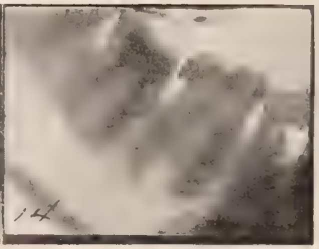


Fig. 13.—Upper first molar showing a fair attempt at root filling. Failure of disto buccal canal filling to reach the end. Not necessarily faulty as end of canal may be thoroughly consolidated.

Fig. 14.—Lower first molar, with curvatures to both roots. Required five sittings to reach end of canals by means of Kalium-Natrium. Gutta percha root filling is shown reaching the ends of the roots.

to be found on roots having attenuated canals. Not only is this fact clinically demonstrated, but I will show you a lantern slide which is so commonly alluded to. (Fig. 1). The latent abscesses at the end of these small roots are never diagnosed except by means of the radiograph. In this respect, it is important to add that in treating these attenuated tortuous canals, it is essential that the operator be absolutely familiar with the anatomy of these roots. When these fine canals are exposed to view and the finest pulp cleansers fail to pass to the end of these canals, it demonstrates to the operator that the point of entrance to the canal is not at a correct angle. It is in these cases that the value of the radiograph has been proven as I will demonstrate with the lantern. A fine wire, placed in these canals as far as they are accessible, is inserted and a temporary stopping of gutta-percha placed over this. A radiograph is then taken. (Figs. 7, 8 and 9.) This at once gives a correct picture of the anatomy of the root in question. The wire guide shows exactly how far the canal has been traversed and at the same time shows how much more of the tooth should be cut away in order that the broach should enter at such an angle as to remove any curvature that may interfere with its passing to the end of the root. It is not unusual in cleansing mesial canals of the lower molars to find it necessary to remove the entire mesial curve of the root in order to have the broach start into the canal from the beginning of the point where the root curves distally. In like manner it is often necessary to remove sufficient of the buccal portion of an upper molar to the gingival border in order to strike this angle correctly. These extraordinary removals of tooth structure are not necessary where the anatomy of the roots is normal, but where irregularities of these roots exist that are frequently considered insurmountable, they can be cleansed to their very ends if sufficient tooth structure is removed. It is simply necessary for the operator to have a clear grasp of the anatomy of the tooth and then to proceed along simple geometrical lines.

Having solved the problem of reaching the end of each canal, it is necessary to remove every particle of organic matter in these canals. When instrumentation has been exhausted, it should not be surmised that all of these portions of the contents of the canal have been removed. It then becomes necessary to call to our aid chemical means to decompose and break down whatever portions of organic tissue still remain attached to the tubuli at the inner periphery of the canals and are hidden away in the small embrasures which are frequently found in out of the way places. In regard to this important part of the technique of the removal of organic matter of pulp tissue, it must be remembered that the pulp matter of different teeth differs as greatly as people themselves differ. The amount of pulp tissue varies in different people to a very great extent and is determined by numerous factors and the character and type of this pulp tissue must be studied by the operator in each case. Prior to 1893 it was the difficulty of removing these fine adherent particles of organic matter which prevented the perfection of the detailed technique I have since had the pleasure of presenting to the profession. When at the Columbian Dental Congress held in Chicago in 1893, Dr. Emil Schreirer of Vienna, presented his clinic on the use of Kalium-Natrium in decomposing the organic contents of pulp canals, it excited more favorable comment than any one thing that was presented before that memorable gathering. The introduction of the use of Kalium-Natrium was, in [illegible] estimation, the missing factor in perfecting the technique of cleansing root canals. All that is required after instrumentation has ceased is the use of this preparation until it demonstrates by its lack of activity that no more organic tissue remains to combine with it. This point is reached when the Sodium and Potassium will lie in the canal of the tooth as inactive as in the bottle of the manufacturer. Having decomposed what little remnants of tissue are remaining, this is washed out by the use of the hypodermic syringe in the canals, using a solution of bichloride of mercury and peroxide of hydrogen, (Marchand) 1-500. On account of the acidity in the Marchand preparation, when the canals are thoroughly dried, there is always left a minute deposit of sublimate at the orifices of the tubuli. It might be well to state that this quantity of sublimate has never discolored the canals. On the contrary, this combination with the hydrogen peroxide makes it a bleaching preparation as well as a cleansing one. It leaves the canals in an absolutely sterilized condition and ready for their hermetical sealing. My practice in this respect has been to close the end of the canal with gutta-percha points that have been soaked in formaldehyde so as to insure freedom from bacteria. Gutta-percha's compatibility with the soft tissues is well known in contra distinction to the irritability of all forms of cements. The objection to gutta-percha consists in its tendency to contract away from the inner periphery of the canals. This has never been found a reality where sufficient care has been given to the insertion of the gutta-percha. Paraffin is much more easily applied for the absolute sealing of the end of the root and the writer only hesitates at the present moment in its recommendation until a sufficient period has elapsed in which the use of the radiograph can demonstrate whether or not the paraffin is absorbed. It is a well-known fact that where paraffin has been used in large quantities in the body, it is finally absorbed and it is only the fear of some such result occurring where the ends of the roots are wide open that deters the writer at the present moment from recommending it in preference to gutta-percha. The apical end of the root having been hermetically sealed either with gutta-percha or paraffin for two-thirds of the distance where a pin is not to be used, the remainder of the canal is now filled with a cement of oxy-chloride of zinc. The germicidal qualities of this cement in this position will act as a barrier to prevent any possible infection from the pulpal portion of the tooth. The value of sulphuric acid introduced by Dr. J. R. Callahan in assisting to reach the end of attenuated canals by its destructive action on the inorganic tissue, should not be overlooked. In fact, the variations in this technique are innumerable and must be left to the skill and judgment of the operator in special cases. Where the principles here enunciated are faithfully carried out, the operator can rest assured that infection in such root canals will ever be an impossibility.

DISCUSSION.

Dr. J. R. Callahan, Cincinnati: Those of us who follow the dental literature of the day are more or less familiar with the line of root canal treatment, advocated by Dr. Rhein.

However closely we may have followed an authority, it is always not only a pleasure but a great help to a clearer understanding to come in personal contact with a man of recognized ability.

We are grateful to the Program Committee and to the essayist for this, his first appearance before our State Society.

As to the subject under consideration I believe Dr. Rhein and myself agree as to the absolute necessity of making as free and direct passage to the apical foramen of every root that is to be filled, as it is possible to do, not permitting a heroic sacrifice of crown substance to deter us from placing the territory indicated under control. Every step in the operation being executed under aseptic conditions, thus enabling us to eliminate all inflammatory and pus conditions.

It is my belief that we have no more right to leave pus conditions in the human jaw than has a surgeon to leave like conditions in any other part of the body. The medical profession, as well as the laity, will in the future more than in the past, hold us to a strict account.

The president tells me that the time for discussion is very short. I take the hint and lay aside my written discussion and ask you to imagine this diagram on the board to be a left inferior second molar, with cavity on distal surface, the last case at my office before coming to this meeting.

Suffice it to say that it was necessary to remove dead pulp tissue from the badly constricted canals. I could not reach pulp chamber as you can readily see, so I took the crown off as indicated by this line. When the floor of the chamber was exposed the anterior canals were not visible; the posterior canal was easy, so we will not mention it again.

However fine those anterior canals were I felt that they contained a thread of disorganized pulp tissue. Had they been empty, the fine exploring bristle would have caught in them. Then I should have reamed the mouth of the canal very slightly and proceeded with the regular sulfuric acid method, but the bristle found no entrance, so sodium potassium was applied. The reaction was quite evident and after washing and drying the chamber the small hair-like canals could be located.

Each canal was then started with the finest boidlerock drill in the right angle, to the depth of about one sixteenth of an inch. These small openings were then carefully reamed with gates glidden drills to a very distinct funnel shaped opening, then there was little or no trouble to place sodium potassium in these pits to test for pulp fragments. After this the sulfuric is used with most happy results, making a smooth, clean canal directly to the end of the root, which can easily be enlarged to any desirable extent by means of larger broaches and acid or with suitable drills.

One of the important functions of the sulfuric acid method being to make the passage of drills through root canals safe and accurate. Always follow the drilling with sulfuric acid and soda solution for the purpose of removing every trace of debris of any and every kind, when the canal is usually ready for drying and filling.

For closing canals I have had very happy results from using a solution of rosin in the same manner that we use chloropercha. This solution will close every atom of space in a *dry canal* and penetrates devitalized dentine to the cementum or enamel, is antiseptic, non-irritating, becomes solid and is stable or non-changeable, so far as I am able to judge at the present time.

I have been using rosin solution more or less for about four years.

Dr. A. O. Ross, Columbus, O.: I have enjoyed this paper very much. I fully agree with Dr. Rhein, that we must have access to and a clear view of the openings of root canals, but I do not think it advisable to so enlarge any canal for the purpose of straightening it, that we may get to the apical third, that nothing but part of the cementum of the root would be left between the canal and periosteum, which would be necessary in many cases. If this is done, in many instances there will be inflamed tissue over this thin portion, if filled with cement, or in fact any material, which would be fully as detrimental, if not more, than leaving the apical third to the care of a good antiseptic. Here are a few teeth that you can readily see would have to be cut until they would be practically useless to reach the apical third, therefore my conclusion and practice is, keep before you the idea that all canals must be cleansed as perfectly as you can *considering* all things, physical ability of patient included, and trust the rest to antiseptics.

Expense has been referred to on account of the time taken. There are more expenses than dollars and cents in dentistry and many a tooth has been lost by the overzealousness of an operator reaching for the last vestige of a nerve way down at the apex of an attenuated root canal. After the patient has been exhausted by the long chase to get it, when he gets out of the chair, he resolves to never have anything more done to the teeth, resulting in the ultimate loss of many other teeth that might have been easily saved. In those cases, I think it would have been much better to have trusted something to a good antiseptic and taken chances on a latent abscess. In fact, I think very little harm is done by a latent abscess that neither patient nor operator is conscious of until it is diagnosed by the radiograph. Just one word regarding the radiograph: In Dr. Rhein's hands it would be safe, but in the hands of the amateur, the patient, also the operator might be injured by it. I would therefore suggest to those who are considering the use of the radiograph as a means of diagnosis, to get a thorough understanding first, not only for their own safety but for the safety of the patient.

Drs. Price and Callahan have so thoroughly discussed this paper that I feel to say more would be a repetition of what has been said.

Dr. M. L. Rhein: It was my desire to bring out as much opposition as possible and I wrote to these three gentlemen with that hope in view, because I am anxious to have whatever weak points there are in the paper brought out for the benefit of dental evolution which is the one thing I trust interests all of us. The question of the slides which Dr. Price displayed is a very interesting one. I do not agree with his conclusion, however, that it would make no difference between the work done out of the mouth and on the living tissues in the mouth. I think the operator was correct in the view he took. I might say right here that I do not consider it an irreparable accident if in the attempt to reach the end of the canal you go through the side of the root. It does not interfere with the success of your work one iota, if you handle such canals aseptically. Having punctured the side of the root we at once seal it and close it with gutta percha and cover this with a cement of oxychlorid of zinc.

In handling roots with great curvatures, even though exercising the greatest skill, if you want to reach the ends of all roots, such accidents will occur. If the artificial opening is immediately sealed in an aseptic manner no bad result can ensue. I do not believe the protrusion of a certain amount of sterilized gutta percha at the end of the root is at all objectionable, and I am pleased to hear the patient express the sensation that he invariably gets when such gutta percha passes through the apical foramen.

As to Dr. Price's remark as to the impossibility of getting gutta percha into certain canals I disagree entirely with him. I said in my paper I did not consider it an ideal root filling; but you can force it through the finest canals if you care to take the time. I use the oil of eucalyptus but not as described by Dr. Price, differing with him as regards the value of the solution of gutta percha and eucalyptus. I have tried it and have abandoned it for the solution of base plate gutta percha in chloroform. Having dried the canals with hot air they are swabbed out with oil of eucalyptus and then dried again with hot air. Having wound a few shreds of steril cotton around a fine steril broach this is dipped in a thin solution of chloro-percha with which the canals are flooded to their apices. A round gutta-percha canal point of a diameter slightly smaller than the canal, is first washed in a solution of formaldehyde, dried with steril paper and passed into the canal. The following is the aseptic technic I use for forcing the point through the apex if possible. My assistant holds in her hands a vial of alcohol and alcohol lamp close to me. My plugger is passed into the alcohol and from there direct into the lamp, to be sure of the sterilization of the plugger, which is allowed to cool and which then forces the point of gutta percha as far into the canal as possible. The plugger point is now covered with cotton, dipped into chloroform and then forced against the gutta percha, tamping it in this manner until, if possible, the patient feels the slightest sensation when we know that the gutta percha has passed the apex. When all the canals have been so treated a cement of oxychloride of zinc is placed over the gutta percha and the root filling is completed.

I want to thank Dr. Ross for the pleasant things he said, but I want to say I am astonished at the position he has taken in regard to latent abscesses. I desire, also, to correct another impression he has that I extract teeth because they have latent abscesses. I endeavor to cure those abscesses; I cure most of them. I showed you some slides where they have been cured. I spoke of cases where they have not been cured, and where there is an unwillingness, either on the part of the operator to cure them, or of the patient to have them cured.

Is it not our duty to cure all such abscesses if we can obtain the consent of the patient? It often becomes a question with the patient as to their willingness to pay the fee or lose the tooth. The tooth with an uncured latent abscess, be it ever so small, should be extracted if the abscess is not cured. I regret that the time does not warrant my going into the technic of curing latent abscesses, but it is a subject that can always be profitably discussed by itself.

SOME POINTS IN DIAGNOSIS*

By George Edwin Hunt, M. D., D. D. S., Indianapolis, Ind.

CORRECT diagnosis is a matter of great importance. There is an old saying among medical men that a correct diagnosis is half of the cure and that is equally true in dentistry. Not long since I attended a local society meeting, where, in the discussion of a paper, three men, all men of more than average repute, skill and ability, told of cases of chronic pericementitis recently occuring in their practice and each one confessed that on opening up the crown and finding a living, healthy pulp, *he had devitalized and extracted it*, hoping that, in some mysterious way it would exercise a beneficial influence on the pericementitis to replace nature's perfect work with a man-made canal filling. And each admitted that the pericementitis continued. That certainly proved a lack of either the diagnosis sense or carelessness of methods, or perhaps both. And these cases are not unprecedented in the least; men are making similar errors in judgment every day all over this broad land of ours. It is not my purpose, nor do I arrogate to myself the ability to tell you anything new or startling in diagnosis but it *is* my desire and hope to refresh your memory regarding several well known points and to stimulate a greater interest among you in the subject of a correct diagnosis of some of the dental ills with which we are daily brought in contact and one or two, perhaps, not so commonly seen but still not rare.

---

*Read before the Ohio State Dental Society, December, 1909.

PRIMARY DENTITION

Normally, dentition is a purely physiological process. It is as natural for the teeth to develop as for the hair and nails to grow. The eruption of the teeth is but an incident in their development and under normal conditions is as much a physiological act as the formation of the dentine or the recession of the pulp. Nature intended eruption to be accomplished without surgical interference and, under natural conditions, that will occur. Also, it must be remembered that at about the time of tooth eruption immensely important changes are taking place in the entire body. The heart, the liver, the lungs, and the complete alimentary tract are undergoing development and changes with a view to fitting the infantile body for a more complex diet and greater growth. Under such circumstances it is not remarkable that some deviation from the normal might take place at times. And it does.

The statistics of our cities prove that there are approximately as many children born in January as in August; as many in April as in October. Despite the poet's rhapsodies on Springtime as the season for love and mating, the figures show that fertilization of the feminine ovum has no season it may call its own. Those same stubborn statistical figures also indicate that the death of infants from diarrhoeal diseases during July and August will average about thirty for every one that occurs in the winter months. The reasons for this are easily given and the fact is only mentioned to convince you that "teething," so often charged with being an etiological factor, must have been maligned. There are as many teeth erupted in the winter time as in the summer time and if teething were as often the cause of convulsions, dysentery and other diseases of infancy as medical men and most mothers believe, either statistical figures or the men who made them, have lied. But the preponderance of probability is on their side. However, there is no question but that grave disorders of the nervous system, and no doubt, by reflection, of the digestive system, may arise from disturbed and difficult dentition. Just as any organ in the body may perform its functions abnormally, or, to put it more correctly, just as any organ in the body may be abnormally distorted during formation, so may eruption of the teeth become abnormal and there may be pressure on the pulp, but it is not more likely to occur than other abnormal conditions are likely to surround other growing organs. If an unusually tough and thickened layer of white fibrous connective tissue retards the advancing tooth crown, there is no question but that the backward pressure on the supersensitive exposed mass of pulpal tissue will result in local pain and may cause convulsions or other sequalae by reflex action. Such conditions are so frequently met with that their possibility is perfectly well established. But the point I wish to emphasize is that in all cases of this character there will be local manifestations present. Some times the gum over the advancing teeth will show bleached and tense indicating considerable pressure from the advancing crown. It is rare that this condition causes serious trouble; on the contrary it is a state in which the baby delights to bite upon a soft yielding substance or to have the gums massaged. Rarely will it be necessary to use the lancet for relief. The mere fact that the gum is pale indicates the fact that the tooth has almost reached the mucous membrane. In other cases the gum will show intense congestion with some swelling, and great pain will be evidenced on manipulation of it. The mouth may be dry or feverish or there may be an abnormal flow of saliva and constant drooling. A rise in temperature, restlessness and sleeplessness are the most prominent symptoms. These are the cases where operative interference is clearly indicated.

If, on examination, the gum shows pink and healthful looking and the child responds agreeably to pressure or massage of it, the cause of what trouble there may be in the remainder of the system must be sought elsewhere. A careful inquiry into the quality and quantity and kind of food, the hygienic environment of the infant, and matters of that nature, is far more likely to develop the true cause of the disease than any investigation of the oral cavity.

ALVEOLAR ABSCESSES

While by far the greater percentage of alveolar abscesses are due to death of a tooth pulp the diagnostician must always bear in mind that some few are produced by other causes. An acute alveolar abscess is easy to diagnose. The local symptoms of pain, swelling, advancing inflammation, and obtrusion of the affected tooth, are too pronounced to be overlooked. But the genesis of chronic fistulae about the face, neck and in the oral cavity, is not so easily diagnosed. Repeated instances may be cited where a mistaken diagnosis has resulted in the establishment of artificial fistulae opening on the face and neck. A more careful diagnosis of chronic abscesses on the part of physicians and dentists will minimize the number of face-scars due to these operations. Every swelling occurring about the face or neck, whether it be slow or quick in forming and whether it be indurated or oedematous, should be suspected of dental origin unless some other cause is clearly demonstrated. It is also a safe rule for both the dentist and physician to recognize the possibility, yes, probability, that any chronic fistula about the face or neck may have had dental troubles for its origin.

Acute alveolar abscesses, except occasionally those due to death of the pulp of a lower third molar which may open under the inferior maxilla or the occasional ones following death of the pulp of an upper molar which may open into the antrum, find the path of least resistance to be outward through the outer alveolar plate. But in low grade inflammations, when pus formation is restricted and the depression of adjacent tissue is less than in acute inflammations, the line of least resistance may vary widely from the above. Such abscesses may establish fistulae opening in the nasal cavity, the antrum or in the oral cavity through the hard palate, if associated with the upper teeth, or may open under the chin, or may burrow beneath the platysma myodes and open near the scapula, or the side or the back of the neck, if associated with the lower teeth. It is perfectly possible to have a fistula about the neck or face that is *not* due to dental troubles but such a large proportion of them *are* due to trouble in the oral cavity, that the dentist or physician should search there first for the cause.

Also, in the oral cavity, the fistula may establish an opening one or two teeth removed from its origin, the pus burrowing through the alveolar process until it finds a favorably weak point in the outer alveolar plate for exit. Do not extract the tooth nearest a fistulous opening until you have positively diagnosed that tooth as the cause of the trouble.

The most positive method of diagnosis is an X-Ray photograph. If that is not practicable, testing the contiguous teeth one by one with ice-water or a hot burnisher may reveal the guilty member, by its lack of response. A discolored tooth, lacking translucency is to be viewed with suspicion, the electric mouth lamp being a valuable aid in this phase of the diagnosis. A tooth sore to pressure or tapping should be viewed with alarm and last, but not least, a small aluminum sound should be faithfully used to explore the fistula. This latter, in the absence of a skiagraph, forms probably the most positive means of diagnosis as by bending it into varying forms, the fistula can usually be explored throughout its extent. The general direction of its trend can always be ascertained. If sudden turns in the course of the fistula, or constrictions in its lumen, make the use of the probe difficult or impossible, a cotton tent in the free portion will open it up so that further sounding may be pursued on the morrow.

The aluminum sound is also valuable in diagnosing denuded bone, devoid of pericementum and necrosed, or about to be necrosed. The feel of dead bone is unmistakable and once felt is always remembered.

Another point to be remembered in diagnosing chronic abscess is that more than one tooth may be involved. I have in mind a case of chronic fistula opening between the upper left cuspid and first bicuspid. The cuspid was opened up, after examination, and after treatment revealed an open sinus from the root end to the fistula—medicaments could be pumped through. But routine treatment failed to cure the condition and an operation for removing the end of the root and adjacent process had been about decided upon, when further examination revealed dead pulps in both the lateral and the central adjoining.

"LAME" TEETH

The cause of chronic pericementitis is often difficult to diagnose. Pericementitis in a tooth with a living pulp may be due to various causes. If the tooth has recently been wedged the cause is obvious and the pericementitis transitory. The malleting of an extensive gold filling may cause pericementitis also, but this will be short-lived. Chronic pericementitis in teeth with living pulps may be due to a filling on an inlay being too prominent, bringing the tooth into undue occlusion and thus putting a strain on the membrane. The pericementum of malposed teeth may become chronically inflamed either from overwork, as in the case of the tooth with a too prominent restoration, or from insufficient work. As, to quote David Harum, "a few fleas on a dog are a good thing. They take his mind off of the fact that he is a dog." so a moderate amount of work is a good thing for the pericementum and a lack of it, in teeth out of occlusion, either from an irregularity or from loss of opposing teeth, may set up a chronic pericementitis. So that too much work or too little work are both bad for this membrane.

Forming or formed pulp stones will often cause chronic pericementitis, the congestion of the pulp spreading to the membrane by continuity of the blood vessels. The process of resorption of the roots of the permanent teeth almost invariably produces chronic pericementitis. Resorption may be due to the pressure of an unerupted tooth, to lack of occlusion, or to an abnormal activity of the cementoclasts due to other causes, but chronic pericementitis will be a prominent symptom. Ptyalogenic calcic pericementitis or hematogenic calcic pericementitis may be the cause of the trouble. A badly fitted band, or an unfinished gingival margin to a filling may be the fault. And always may a progressive case of pulpitis be reckoned as a probable cause.

The diagnosis of overworked teeth is not difficult. The landmarks of mastication on the restoration or on the crown. will be visible and the remedy is obvious. And the diagnosis of underworked teeth is equally plain. If the tooth is out of occlusion because malposed, the irregularity should be corrected. If because of a loss of opposing teeth, prosthesis is indicated. Pulp stones and resorption are best diagnosed by the skiagraph. Failing that, pulp stones may be diagnosed by exclusion. The pulpal pain in pulp stones is a low grade of inflammation, a "growling" pain, remittent but seldom acute. Ordinarily pulpitis is accentuated at night but pulpitis due to pulp stones is just as likely to manifest itself at one time as at another. Pulpitis from other causes is either progressive or retrogressive, it either gets worse or it gets better. The pulpitis of pulp stones goes on and on, week after week and month after month with little or no change for better or worse.

Diagnosis of root resorption, if the pulp be living, is difficult unless it has progressed to a stage where the case is hopeless. This condition may be detected in pulpless teeth by the unusual size of the canal opening at the apex and the feel of soft tissue at that point. but in teeth with living pulps the only method of diagnosis, aside from the skiagraph, is the rotation of the crown, when resorption has progressed sufficiently to admit of it, the circle described indicating a shorter pivoting than a tooth with a full length of root would show.

Pyorrhoea due to salivary deposits and that due to serumal deposits after the pocket has opened at the gingival margin, is diagnosed by sight, touch and smell. In the hematogenic form, prior to the formation of a distinct pocket with an exit at the cervix of the tooth, diagnosis is more difficult although congestion over the apical third of the root and soreness to pressure there, are indicative.

The diagnosis of the cause of chronic pericementitis in pulpless teeth requires equal care. The most common cause is infection and inflammation of the membrane from decomposing organic matter in the pulp canal. If the treatment of the canal until it is in an aseptic condition does not produce a cure, some other cause must be sought. Many cases of pericementitis are due to over-treatment with irritant drugs. Our modern method of treating putrescent canals with cresol and formalin is not free from danger. In proportion as the formation of hydrogen sulphide and ammonia decrease, or are originally absent, the amount of formalin in the formula should be decreased. A fifty per cent. solution of formalin in an aseptic pulp chamber or canal will almost certainly cause pericementitis. A fraction of a drop of a five per cent. solution passed through the apical foramen will also do it. Fifteen years ago we had many a lame tooth from the use of oil of cassia in sterile or nearly sterile pulp canals, the vapor from it being an active irritant, as is, also, that from formalin. If over-treatment is suspected, pack the canal tightly with cotton tents moistened with beechwood creosote or clove oil and rest the tooth for a few days.

The use of hydrogen dioxid in putrescent pulp canals with large apical foramina is a prolific source of pericementitis, the expansion of the released oxygen forcing infectious matter through the apex. Hydrogen dioxid should never be used in the canal until mechanical measures have cleared it of the bulk of putrefactive matter although it may be used with comparative safety in a well opened pulp chamber. Unskillful instrumentation, by which infectious matter is pistoned through the apical foramen or an infected broach is passed through the foramen, may set up the inflammation.

It is also my belief, although I have no data to sustain it, that many cases of chronic pericementitis which occur in teeth we open up with all necessary precaution, are due to the stimulation of aerobic microorganisms in the canal that had been fairly quiescent before the pulp chamber was opened.

Lame teeth with canals filled are far from uncommon and the lameness may be due to several causes. For instance, a broken broach may be projecting slightly beyond the apex. This is certain to cause chronic pericementitis. Or a portion of the canal filling may have been forced through the foramen. If of gutta percha and small in quantity it is likely to be fairly well tolerated by the tissues but occasionally it is not. The canal, due to crookedness, constriction or faulty manipulation, may be imperfectly filled at the apex, permitting serous fluids from the vessels of the pericementum to enter the canal by osmosis and decompose by putrefaction; or perhaps a small fragment of pulpal tissue has been left *in situ* to disintegrate and form irritant gases and consequent pressure; or maybe the root has been perforated with the drill during instrumentation. In teeth that have been long the seat of putrefactive decomposition, the dentine becomes so infiltrated with septic matter that unusual efforts and considerable time are requisite to sterilize it. If not thoroughly sterilized, continuing disintegration of the contents of the tubuli may cause a low grade of pericementitis by filtration of the products of decomposition through the cementum. And always, in pulpless teeth as in those with living pulps, resorption of the root will cause chronic pericementitis, as may also, malocclusion, non-occlusion and over-occlusion. This latter is often evidenced by pericementitis in abutments for bridges until use has toughened and thickened the membrane sufficiently that it may bear the strain.

These "lame ducks" of dental practice are often a source of great anxiety and trouble to both the practitioner and the patient and a correct diagnosis of the cause is a great assistance, enabling the operator to give the case intelligent treatment.

LEUCOPLAKIA

Leucoplakia, meaning "white surface," is a condition sometimes attendant on a chronic catarrhal stomatitis. It is variously designated as leucoplakia buccalis, leucoplakia linguae and leucoplakia gingivae, according to location. Leucoplaques in the mouth are of two kinds. The grayish-white, elevated curdlike patch of secondary syphilis resembles the true form of leucoplaque in the advanced stage of the latter but not in its early stages. The true leucoplaque is, at first, a thin, shiny, bluish or pearly white patch, not elevated above the level of the surrounding mucous membrane. These patches are often irregular in shape, varying from an area the size of a split pea to a plaque as large as a half dollar. Often they are spiculated, or star shaped. Two or more plaques may coalesce as they spread. At first they are not sensitive but if they progress toward degeneracy, considerable pain and distress may develop. It is not unusual for the shiny, whitish plaque to remain quiescent, neither increasing or decreasing in area or changing in character, for months or years.

Leucoplakia is a disease of irritation. The majority of cases occur in the mouth of tobacco chewers and smokers and in a large percentage of cases, a previous history of syphilis is present, although this is not essential as is evidenced by the presence of the disease in the mouths of persons having absolutely no history of that character. Anything capable of setting up a chronic catarrhal stomatitis, as an unclean mouth, highly spiced foods and condiments, hot drinks, raw liquors, bad fitting prosthetic work, and the like, may induce the disease. A thin, sensitive, irritable mucous membrane is a predisposing cause and the gouty diathesis has been given as a predisposing cause but without sustaining proof, or, I may add, disproof.

As the disease progresses, if it does progress, the plaques thicken, becoming raised above the level of the membrane, and gradually take on the roughened, corrugated surface which causes them to resemble the patches of secondary syphilis. The parts become dry, owing to the effect of the disease on the mucous glands, and, later the affected tissue will be riven and split by fissures. This latter condition is especially prone to obtain in leucoplakia linguae. At this stage the use of tobacco, liquors and acid or highly spiced foods causes much pain and distress.

On the tongue the plaque often presents a warty appearance in the later stages, leucoplakia ichthyosis, due to an excessive hyperplasia of the epithelium. The leucoplaque may peel off in spots or entirely, leaving a raw, sore, bleeding and extremely sensitive surface

The disease may be differentiated from secondary syphilitic patches by a three or four weeks' course of the iodids, which would clear up a syphilitic patch.

The especial interest surrounding this disease lies in the fact that a substantial percentage of carcinomatous growths in the mouth are preceded by leucoplakia. This percentage is estimated at from twenty to forty by different authorities, enough to give it importance. The necessity for its recognition by the dentist lies in the fact that early recognition of a cancerous condition is very desirable and the opportunity for the dentist to discover and diagnose a condition—leucoplakia—which is frequently the precursor of so dread and malignant a disease as carcinoma, is much greater than the opportunity afforded the medical practitioner. The fact that the disease is painless in its early stages, keeps the patient from calling the attention of the physician to its existence and the dentist is logically the person who should be its discoverer. In the later stages, when the spread of the disease and consequent pain has induced the patient to apply to the general surgeon, carcinomatous cells are often developed and permeating the contiguous tissue.

The local treatment of leucoplakia consists of putting the mouth in a strictly healthful condition. All carious cavities should be filled, all abnormal accumulations on the teeth removed, strict oral prophylaxis observed and all ill-fitting pieces of prosthetic work replaced by well-fitting ones.

Tobacco and all foods calculated to irritate the mucous membrane should be interdicted and the physiological resistance of the patient increased by tonics, proper exercise, simple diet, and other hygienic measures.

Local treatment of the patch is seldom efficacious except it be accompanied by constitutional treatment. Painting the plaque with balsam of Peru, with a twenty per cent. solution of potassium iodide, and with equal parts of the tinctures of aconite and iodine have been recommended. Alkaline mouth washes, borax and honey on the denuded surfaces, and other palliative treatment will diminish the pain. Anti-syphilitic treatment should, of course, be given when indicated. As a last resort, and the only resort if cancer cells have developed, surgical interference should be sought.

DISCUSSION.

Dr. S. D. Ruggles, Portsmouth: Dr. Hunt's paper covers one of the most important functions of the dentist, diagnosis.

His first reference to the three practitioners who failed to find the cause of the chronic pericementitis serves well to illustrate the carelessness, not of the ordinary practitioner, but one of recognized ability and long experience, to diagnose a condition met with in daily practice. An unusual condition may baffle the ablest at times, and not lower him especially in the estimation of the general public. The laws of this land only demand reasonable care and ability, something possessed by the graduate of any reputable dental school. The fault lies with the methods employed rather than the lack of ability.

The dentist should be prosecutor, jury and judge, and be in such frame of mind as to eliminate all else not connected directly with the particular case in hand. Snap judgment is the cause of many fatal mistakes.

System is just as essential in conducting a dental practice as a manufacturing plant. A good lesson can be had from the medical man who uses a card system for office work.

Let the patient be comfortably seated and given to understand that your entire time and attention are his for the particular purpose of finding out and helping to solve the problem in hand.

Do not make an examination until you have a complete history of the case. A few intelligent questions well directed will not only give you a clue as to the cause, but allows a general survey of physical and mental make up of the patient. Don't lose sight of the fact that patients have ideas of their own concerning their troubles and occasionally correct ones.

After learning the character of the pain, frequency and duration, together with any other data you think is needed, let the patient point out the location and proceed with the examination.

By this time you have formed some opinion as to the trouble and you should be wise enough to keep your own counsel, for a differential diagnosis may reveal an entirely different condition from what was suspected. By a differential diagnosis is meant the elimination or exclusion of certain elements which may produce similar conditions, but not exactly like the one under consideration.

By not committing yourself until every phase of the case has been considered, you not only make a favorable impression on the patient but save yourself considerable embarrassment by making mistakes.

In the mistaken diagnosis of the chronic pericementitis referred to it is quite evident that the gentlemen in question had uppermost in their minds just what most of us would have, namely, hyperemic pulps. A little time and forethought, however, would have saved this wholesale slaughter of innocent pulps and accomplished what was sought for—relief.

Dr. W. A. Barber, Springfield: It is a privilege indeed to be permitted to discuss the excellent paper from our able representative of the Hoosier State. One of the chief causes in the failure to properly diagnose the cases that he has enumerated so carefully is the failure upon the part of a majority of the profession in general to attach sufficient importance to this important branch of our work. We go about our examination in a sort of a haphazard way, often times not making a charge for the service so rendered, and it is a foregone conclusion that if we do not consider our ability any higher than this, we could hardly expect our patients to attach the importance that is due to this class of service.

As specialists we cannot estimate the expense to ourselves to obtain a fitness to render valuable service, nor can we expect the laity to appreciate the service rendered in such cases if we treat the diagnosis of diseased conditions in such a light off-hand way. The blame for lack of appreciation we can lay to our own doors.

To illustrate: take the removal of an abscessed tooth. The same work done on any other part of the body or in the oral cavity by our brother practitioner, the general surgeon, and that patient would be in the hospital or in the home for a week or ten days with no questions asked. Thirty minutes is about all the time they would give us, and when you request a return the next day for treatment and upon their failure to appear you telephone, they reply: ''Oh, I am all right and I am too busy to come down, Doctor.''

How often have you noticed in your diagnosis of an abscessed condition when you inquired relative to the bowels, noting the evidence of a constipated condition present there, that your patient would look up in a startled manner, ''wondering, no doubt, what you had to do with the general systemic condition.'' That is the point I wish to make. The failures that we make in diagnosis are in a great many cases due to the fact that we do not attach sufficient importance to a great many things in dentistry; we fail to make the seriousness of certain conditions that are present in the oral cavity more vividly impressed upon the minds of our patients. They, in other words, regard the dental profession as a body of workmen whose field of operation is the teeth alone and we must shoulder the blame for the situation that we have to face for the lack upon our part of thoroughness in every detail of an examination and diagnosis and our inability to impress the patient as any other practitioner of a specialty would do.

METHOD ON RESTORING BICUSPID ROOTS TO USEFULNESS *

By Auber Peebles, D. D. S., Wilmington, Ohio

There are roots of superior bicuspids sacrificed many times, when a little time and careful effort would make good foundations for the support of strong and serviceable crowns.

In this case decay has extended to such a distance that separation at the bifurcation has taken place. These roots, which are so often extracted, are disinfected, filled and so shaped, that small gold caps may be made to fit each one accurately; and in each cap an iridio platinum pin is soldered as for a Richmond crown. These caps with pins attached are removed in impression and mounted on model of investing material so as to be able to solder over ends, an oval piece of platinum plate about 28 or 30 gauge: then you have the foundation for a crown.

The remainder of crown is made by adjusting a facing of suitable size and color to correspond with the other teeth, and after backing it with 40 gauge 24k. gold, wax up an inner cusp to properly occlude with lower teeth, and invest in casting ring. After casting with 18 or 20k. gold direct to backing, polish and you have a very strong and very serviceable crown instead of a bridge, which would have been necessary had roots have been extracted.

*Given as a clinic at Ohio State Dental Society, Dec. 1909.

HOW SHALL THE STOMATOLOGIST BE EDUCATED?*

By Eugene S. Talbot, M. D., D. D. S., Chicago

IT is a popular idea that "the dentist on graduation is better equipped for practice than the physician." This is misleading, not only to the dental graduate, but also to the physician and the laity. The statement was tenable seventy years ago when the first dental college was established and dental mechanics only were practiced, but modern research has shown us that many incipient diseases first show themselves in the mouth by their effect on the mucous membrane, alveolar process, jaws and teeth. These conditions frequently become serious.

In conversation with some of the members of the Council on Medical Education, in regard to the medical education of the dentist, they were surprised to know that further education was necessary. They were under the impression, that the graduate of dentistry had received a full and complete education; that is, all that was necessary to fit him for his special branch of medicine.

There are a few dentists, who, after they have been in practice a short time, realize that they know little of the treatment of diseases of the mouth, so necessary at the present time. Some are willing and able to take a medical course to prepare themselves thoroughly to become stomatologists. Others would like to do so, but circumstances will not permit it.

NO CREDIT FROM THE MEDICAL SCHOOLS

The medical school does not give credit for any part of the course of the dental graduate (and rightfully), because he has scarcely a smattering of the fundamentals of medicine. It is necessary for the dentist to take a medical course of four years, over and above the three years spent in the dental school. In the best dental schools, the Dean will tell you the dental students sit in the same room, hear the same lectures, and stand the same examinations as the medical students. All know the dental student is not required to have the close marking required of the medical. What a disgrace for the dental graduate after a three years' course in one department of a university to have so vague a knowledge of the fundamentals of medicine that he cannot get one year's credit in another department in the same university although he has been sitting on the same seat, in the same room and hearing the same teacher on the same subject. Teachers on the fundamentals of medicine have informed me many times that dental students did not need the same serious consideration of the subject as the medical students required, and therefore their examination was not so severe; hence, the dental student is allowed to slip through on a lower average than the medical student.

The dental student on graduation knows little or nothing of the fundamentals of medicine, no matter how well he may have been taught. The reason is that the dental student on matriculation, is immediately put to work on the mechanics of his profession. The entire environment and atmosphere of the school is mechanics. The contrast between the mechanic and the biologic is so great that the student immediately asks the question, "What is the advantage of all this study of anatomy, physiology, pathology, chemistry and therapeutics when the care of the teeth is all I require?" Thus the atmosphere of the school itself makes the student a mechanic rather than a broadly educated man.

---

*Read in the Section on Stomatology of the American Medical Association, June, 1910, and published in THE DENTAL SUMMARY by special arrangement with the Journal American Medical Association.

THE DEGREE OF D. D. S.

Some thinkers are trying, or rather expecting to raise the standard of the D. D. S. to equal the M. D. degree, and thus to an honorable position. To my mind, it can never be accomplished. The D. D. S. will always be considered an inferior degree. To make the degree equal to the medical the student must study the same number of years. Then, why not confer the medical degree? The student will not tolerate an inferior degree. Present methods of dental teaching will not improve the student's mentality though a six-year course be required for graduation..

STOMATOLOGY AS A SPECIALTY

There can be no question that men proficient in the mechanics of dentistry (to repair and restore lost parts), and men to treat diseases of the mouth (which includes the jaws and alveolar processes), are essential. Shall the specialty be divided and the dentist confine himself solely to the mechanics of the teeth and the stomatologist to the diseases of the mouth, or shall the student be so educated as to combine both?

If the specialty is to be divided, dental schools are wasting time and money in even attempting to teach the fundamentals of medicine. There are, in the United States, fifty-four well-equipped schools to teach the mechanics of dentistry, and they are all that can be desired in this direction. The stomatologist, on the other hand, is losing time in not acquiring a better foundation for the practice of his specialty. He should matriculate in the medical school and obtain a thorough medical education, since modern research has demonstrated that not a single disease of the mouth, jaws and teeth but has a systematic relationship. Personally, I am of the opinion that the two departments, pertaining to all operations in the mouth, cannot readily be separated. The question is then, "How Shall the Future Stomatologist be Educated?"

INTERNATIONAL ASSOCIATION OF STOMATOLOGY

In August, 1907, there was organized in Paris, France, The International Association of Stomatology. The delegates to that meeting all held medical degrees from universities and colleges in the various countries from which they came. Nearly every country was represented. The object of this organization is to urge a medical education alike in all countries for those practicing diseases of the oral cavity.

At this meeting two questions were settled: First, That a complete medical education must be required of every dentist. Second, the word "stomatology" was defined as meaning the science that treats of diseases pertaining to the mouth; the "stomatologist" is one who treats diseases of the mouth.

THE QUESTION TO BE SETTLED

At the second meeting of the A.S.I., held at Budapest, August, 1909, the following paper by me, "How Shall the Stomatologist be Educated?" was discussed. The thoughts therein expressed were incorporated in a report prepared for universal discussion. These questions are to be sent to members in the various countries for careful study, and are here presented for your consideration. They are as follows:

a. When is it best to begin the special studies; during the time of the general medical studies or immediately after these?

b. Advantages and disadvantages of each.

1. Special studies begun during the special medical course.

2. Special studies begun immediately after the general medical course.

c. Length of time required for special studies of each system.

d. Details of the special study of each system.

It is necessary that these questions be seriously considered by the members of this section, since they must serve as the foundation for future dental education in many, if not all, the countries, and also for the lengthy discussion before the A.S.I. at its next meeting in Paris, 1911. It will be necessary also to publish this discussion in full in the Bulletin for 1910, Volume III, from the *Journal* of the American Medical Association, in order that it may appear some months previous to that meeting, so that an intelligent understanding of the subject may be presented from each country.

The fathers of American medicine, the late Drs. N. S. Davis, Gross, Sayre, Flint, Toner, Pancost and many others, believed that diseases of the mouth, including oral hygiene, the most important study of the human body. Stomatologists are of the same opinion. This being the case, should not this specialty require the same method and the same length of study as the lesser specialties of medicine? The dental profession have not yet awakened to the seriousness, importance and scope of their calling.

The main point and first to be considered is, how can the stomatologist be educated and not lose time, but have all his studies count for future work? At the present time there are two methods of studying medicine in the United States, hence the education of the stomatologist must be based on these methods, subject to more modern improvements. Both medical and dental students, at the present time, must possess a high school diploma or its equivalent; therefore, they start their chosen profession on an equal footing. In some medical schools, the high school graduate is allowed to matriculate, pursue a four years' course and graduate with an M.D. degree. The other method has been worked out by Dr. John Milton Dodson as follows:

> ''With the last decade there has developed a plan in several American universities under which a student takes, during the junior and senior years, those sciences which constitute the first two years of the medical curriculum. Credit for the successful completion of the work in these branches is permitted to count both toward a baccalaureate degree in the collegiate department and toward the degree of M.D. in the medical school. The student is thus able to secure the baccalaureate degree and the degree of M.D. in from six to seven years after his completion of the high school course and his matriculation in the university. The plan has extended rapidly, it being now in operation in over thirty American universities. It is believed by many educators to be the best solution yet offered of the problem of how to provide a good many students with a fairly adequate premedical training, and to induct them into the study, and later, the practice of medicine at a reasonable early age.''

This method of teaching will, no doubt, become universal in this country. By either method the dental student must pursue the fundamentals of medicine in physics, zoology, chemistry, anatomy, physiology, embryology, bacteriology, pharmacology and the principles of pathology.

The first two years of medical studies should be conducted in the university proper since they are better equipped than the average medical college for this work. The stomatologist should continue the course to this point with the medical class and obtain credit. He should not come in contact with patients during the first two or three years of study. Laboratory work and the use of the microscope has given him considerable experience in finger manipulation. The finger manipulation cannot be more delicate than that required in the laboratory and dissecting room of a university or medical school. To offset this objection, if it can be considered one, it is essential that the student should be required to obtain as much of his professional education as possible before coming in contact with the commercial side of his specialty, which is so demoralizing to his future welfare by the present methods of teaching.

One strong argument put forth against a medical education for the dentist is the early requirement of finger skill which is supposed to be lost later in life, the student being too old after a medical education to acquire the skill necessary to perform operations in the mouth.

To ascertain the ages of entrance into the best schools in the country, I wrote to eight, requesting them to send me a report of the ages of matriculation for the past five years. Secy. Koch, of the Northwestern University Dental School; Deans Smith, of Harvard University Dental School; Kirk, of the University of Pennsylvania Dental School, and Hoff, of University of Michigan Dental School, responded.

TABLE 1.—AGES OF STUDENTS OF NORTHWESTERN UNIVERSITY DENTAL SCHOOL AT THE TIME OF ENTRANCE.

Age.	1904	1905	1906	1907	1908	1909	Total Students.	Total Years.
Eighteen	13	24	8	6	4	6	61	1,098
Nineteen	19	23	8	8	11	13	82	1,558
Twenty	22	23	14	15	18	21	113	2,260
Twenty-one	22	34	6	19	14	27	122	2,562
Twenty-two	20	32	13	15	11	23	114	2,508
Twenty-three	21	24	13	8	6	17	89	2,047
Twenty-four	13	24	12	7	11	10	77	1,848
Twenty-five	15	12	6	12	4	11	60	1,500
Twenty-six	10	9	7	7	6	7	46	1,196
Twenty-seven	8	6	3	6	6	6	35	945
Twenty-eight	4	9	1	5	2	2	23	644
Twenty-nine	8	8	2	4	2	3	27	783
Thirty	2	3	3	3	7	4	22	660
Thirty-one	2	4	1	4	1	1	13	403
Thirty-two	..	3	1	1	1	3	9	288
Thirty-three	..	1	..	4	..	..	5	165
Thirty-four	1	1	..	3	2	1	8	272
Thirty-five	1	2	..	1	1	1	6	210
Thirty-six	2	1	1	1	2	..	7	252
Thirty-seven	..	2	..	..	2	3	7	259
Thirty-eight	1	1	..	..	..	1	3	114
Thirty-nine	..	2	..	..	..	..	2	78
Forty and over	..	..	2	..	..	..	2	80
Total	184	248	101	129	111	160	933	21,730

Average 23.29.

TABLE 2.—AGES OF STUDENTS OF HARVARD UNIVERSITY DENTAL SCHOOL AT THE TIME OF ENTRANCE.

Age.	1905	1906	1907	1908	1909	Total Students.	Total Years.
Sixteen	..	1	..	..	..	1	16
Seventeen	1	4	..	1	1	7	119
Eighteen	3	2	9	2	6	22	396
Nineteen	7	6	5	9	14	41	779
Twenty	9	9	13	11	15	57	1,140
Twenty-one	12	11	7	11	15	56	1,176
Twenty-two	17	4	4	6	5	36	792
Twenty-three	8	7	4	3	7	29	667
Twenty-four	3	4	7	4	6	24	576
Twenty-five	2	2	2	4	2	12	300
Twenty-six	5	4	3	2	2	16	416
Twenty-seven	2	2	2	3	1	10	270
Twenty-eight	2	1	3	1	5	12	336
Twenty-nine	3	4	..	3	2	12	348
Thirty	1	1	2	2	4	10	300
Thirty-one	4	1	..	1	2	8	248
Thirty-two	2	1	..	1	2	6	192
Thirty-three	1	1	2	..	..	4	132
Thirty-four	..	1	..	1	..	2	68
Thirty-six	1	..	..	..	..	1	36
Thirty-seven	..	..	..	..	1	1	37
Thirty-eight	1	..	..	..	..	1	38
Thirty-nine	1	..	..	..	1	2	78
Forty	..	1	1	1	..	3	120
Forty-one	..	..	1	..	..	1	41
Forty-two	..	..	..	..	1	1	42
Forty-four	..	..	3	..	..	3	132
Total	85	67	68	66	92	378	8,795

Average 23.29.

TABLE 3.—AGES OF STUDENTS OF UNIVERSITY OF PENNSYLVANIA DENTAL DEPARTMENT AT THE TIME OF ENTRANCE

Age.	1905	1906	1907	1908	1909	Total Students.	Total Years.
Seventeen	3	3	3	2	2	13	221
Eighteen	13	17	22	16	21	89	1,602
Nineteen	25	40	40	26	26	157	2,983
Twenty	30	21	26	38	25	140	2,800
Twenty-one	31	33	29	23	28	144	3,024
Twenty-two	17	22	28	9	14	90	1,980
Twenty-three	11	13	23	12	7	66	1,518
Twenty-four	14	13	9	5	3	44	1,056
Twenty-five	9	8	6	5	4	32	800
Twenty-six	3	7	6	5	3	24	624
Twenty-seven	4	5	2	6	2	19	513
Twenty-eight	3	3	8	3	2	19	532
Twenty-nine	1	2	1	2	2	8	232
Thirty	2	1	1	1	1	6	180
Thirty-one	4	2	1	..	..	7	217
Thirty-two	2	1	1	..	..	4	128
Thirty-three	..	..	..	1	..	1	33
Thirty-four	..	..	1	..	1	2	68
Thirty-five	..	..	1	..	..	1	35
Thirty-six	..	..	1	..	1	2	72
Thirty-eight	..	..	..	..	1	1	38
Forty	..	..	1	..	..	1	40
Forty-four	..	..	..	..	1	1	44
Total	172	191	210	154	144	871	18,740

Average 21.53.

TABLE 4.—AGES OF STUDENTS OF THE UNIVERSITY OF MICHIGAN DENTAL SCHOOL AT THE TIME OF ENTRANCE.

Age.	1905	1906	1907	1908	1909	Total Students.	Total Years.
Eighteen	4	1	5	2	3	15	270
Nineteen	3	4	11	8	10	36	684
Twenty	3	5	8	4	10	30	600
Twenty-one	7	1	8	9	9	34	714
Twenty-two	5	2	9	8	4	28	616
Twenty-three	1	2	3	4	9	19	437
Twenty-four	4	1	4	2	1	12	288
Twenty-five	5	..	1	3	..	9	225
Twenty-six	3	1	..	3	1	8	208
Twenty-seven	..	..	1	..	..	1	27
Twenty-eight	1	2	4	1	2	10	280
Twenty-nine	1	1	..	1	..	3	87
Thirty	..	1	..	2	1	4	120
Thirty-one	2	..	..	..	1	3	93
Thirty-two	..	..	1	1	..	2	64
Thirty-three	1	..	..	..	..	1	33
Thirty-four	..	..	1	..	..	1	34
Total	40	21	56	48	51	216	4,780

Average 22.12.

WHAT THE TABLES SHOW

The reports are interesting since they show the youngest to be 16 and 17 and the oldest 44, with an average in Harvard and Northwestern of 23.29, and in the University of Pennsylvania 21.53. I have known students to matriculate in the dental school as late as 54 years of age. The ages of matriculation in all the other dental schools must range in a similar manner. The fallacy of this argument must, therefore, fall to the ground.

In the university medical schools, the average is lower than in the regular medical schools. Thus in Harvard and Johns Hopkins the average is about twenty, while in the schools not connected with universities the average is from twenty-two to twenty-four. Students leave the high school in this country usually at eighteen to twenty years of age. The same is true of the gymnasium in Germany and the institutes of France.

The reason that medical and dental students matriculate late in life in schools not departments of universities is that most of these students have started out pursuing other avocations. Not making a success in their chosen calling or having a taste for the professions they have sought new fields for livelihood. Few of these men have taken a high school course or have even passed successfully through the grammar school. Every year the people are becoming more exacting in regard to the education of students for the professions. This will necessitate the students entering the profession direct from the high school, thus reducing the age of matriculation to a minimum. Students of dentistry entering the medical school at twenty can graduate with both medical and dental degrees at twenty-six, which is early enough for any man to begin the practice of a profession.

The stomatologist, having finished his two or three years of the fundamentals of medicine, now has the choice of two methods. He can finish his full course in medicine before taking up his specialty, or he can take three months in the summer for his clinical work and finish in one or two extra years, thus cutting off one year in his special course and adding one to his medical course. In either case he has spent only six years as against the seven or eight for other specialties. This is certainly not too much to expect of a department of medicine recognized by medical practitioners as the most important specialty.

THE ELECTIVE SYSTEM

The elective system in medicine, as recommended by ex-President Eliot, of Harvard, is meeting with much favor. There is so much detail in each medical specialty that no one student can master the subjects sufficiently to enter into a general practice of all. Special teaching is necessary even after the graduate has finished his hospital training.

A full and thorough course of two or three years should be required of all students in the major branch of medicine, after which the student should select the specialty he desires to practice and with the aid of the Dean select such other branches as will fit in with those of his specialty. His special training in the stomatologic hospital (dental clinic) can be continued in the schools, which are now so well equipped for special work. The courses in both general and special medicine should continue throughout the year, divided into four quarters. By this method, the student can better select the course best adapted to each year's curriculum.

SPECIAL DEGREES FOR SPECIAL WORK

Should the elective system eventually be adopted, then all the "ologies" would specialize after the second or third year of medical study. This would simplify matters and the stomatologist would then stand on an equal footing with the other specialists. It would not be a bad plan also to confer the special degree of D.D.S. on such students as become proficient in special work. The specialties should be pursued as they are at the present time. Having finished his medical course, his special teaching should be shortened one year at least. The details of special instruction can only be worked out in the dental hospital on those students who have acquired a medical course. The student's special instruction should continue until he has become proficient in the different departments and has come up to a given standard. In other words, merit should be recognized, whether it be six months or three years. The standard of requirement should be established by a committee consisting of one delegate from each university stomatological department, or still better, by the state board of dental examiners.

REGISTRATION OF SPECIALISTS

The state board of medical examiners should register the graduate of medicine and the particular specialty he has become proficient in. The law should require him to practice that specialty. Should he find later that he is better adapted to practice some other specialty, he should pursue studies along that line, stand another examination before the state board of medical examiners and be licensed to practice that specialty.

It is to be hoped that the Council on Medical Education and the Association of American Medical Colleges will soon consider the return of the prodigal son to the mother profession, and not only make provision for his welcome back into the household, but also provide for the other brothers (specialists) that the fatted calf may be distributed equally to all children so that they may all eat and drink of the knowledge of medicine and make merry.

HOW SHALL THE STOMATOLOGIST BE EDUCATED?*

By J. E. Powers, M. D., Providence, R. I.

IN discussing the subject "How Shall the Stomatologist be Educated?" I am conscious of the fact that true science aims at the attainment of truth; honest criticism and honest discussion are the only factors that will or can assist in the accomplishment of her aim. I do not assume an attitude of criticism; I am simply responding to a call which I consider to be the duty of every member of that profession which has greater possibilities for the future than any of her sister professions, so-called.

That there are branches of pathology, or I might say of pathologic physiology, which have never been explored, is a fact too obvious for discussion here. It is an accepted fact that dentists and dentistry have, in the services which they have rendered, accomplished facts which are only short of marvelous. If we read the history of dentistry and reflect on the strides which have been made in the preservation of the teeth, we may indeed point with pride to a noble record. But we must be honest with ourselves, and if we are to assist in placing this profession in that place which it should rightly occupy among the other professions we cannot content ourselves with the fact that it is so much better than it was twenty or thirty years ago; we must ask ourselves, in consideration of the number of the thousands of men and women who are going into the profession of dentistry—as well as those who have been practicing it for years, and in consideration of the number of dental colleges which exist today. Does this profession occupy the position that it should occupy at present? We all know the answer, and unless enthusiasm or deceit replace honest judgment and honest opinion, the answer spells, No. Now we must submit to a little self-examination and determine whether or not the fault lies with us as individuals or as a profession, or whether or not we are doing the best we can with the training which we have received at our dental colleges. It is reasonable to believe that most of us are doing all we can to make our profession the greatest in the world. Then to continue to reason along logical lines, the only conclusion is that our education is confined too much to the mechanical or artistic department of our profession.

---

*Read in the Section on Stomatology of the American Medical Association, at St. Louis, June, 1910, and published in THE DENTAL SUMMARY by special arrangement with the Journal American Medical Association.

WHAT DENTISTRY COMPREHENDS

Before proceeding further, let us here understand whether we consider that dentistry comprises merely the making of artificial dentures, extracting teeth and insertion of fillings, or whether it comprehends something more; for instance, whether it has a direct relation to histology and physiology; whether it should have a part in the interpretation of physiologic and pathologic metabolism, whether it should have a complete knowledge of those factors which preserve health and breed disease, not only of the teeth, but of the mucous membranes from the mouth through the whole alimentary canal, with all its adjacent and component parts? If we accept the former definition, then I say that we are highly trained technicians, and yet not as highly trained or as well developed in the manipulative skill as are some of our colaborers, who are not considered by us to belong to a profession at all.

If we accept the latter, then I say that our education is inadequate, and that in order to fit ourselves to fulfill the obligations which are expected of us, and to make our profession all that our fathers intended it should be, we are obliged to call for a change in the teaching of the future students of dentistry. Let us agree to stop asking for recognition, from a profession which many of us believe is only to be our equal, namely, the medical profession. There never was and there never will be either an individual or a profession that need call for recognition. Recognition is that indefinable something which is always thrust on the individual when that individual occupies the position which is deserving of such recognition. The world is the judge and the world gives the recognition as soon as we deserve it. No sooner, no later.

FOUNDATIONS IN DENTISTRY AND MEDICINE

That the foundation on which the dental graduate is sent into the world is greatly inferior to the corresponding foundation of the graduate in medicine is a well-known fact to all who have taken the time and patience to investigate the educational advantages of each. The dental graduate will tell you that he studied the same subjects as did the medical student. This is true, but the question is, Did he study them as thoroughly, or rather, was the standard for him and his medical brethren equal? In a large majority of cases he is laboring under a delusion if he believes that he knows as much, or even if he thinks he was given the same advantages in learning pathology, bacteriology, biological chemistry, or even anatomy, or physiology as was his medical brother. And now let me anticipate your question. Why? Because this branch of the science is taught by the professors of medicine, and in some instances the members of the dental faculty, who were graduated twenty-five or thirty years ago, do not seem to understand the importance of a proper medical education. We are apt to become subjects, if not indeed victims, of our environment, and the dental student is no exception to the rule. He breathes an atmosphere while on the dental side of the college, which may give his mind a bias. This condition of mind is not always correct, and when the student comes under the instruction of the professors of medicine, the men who are spending their lives in fitting the candidate for dental honors (for that seems to me the most important part of their life's work), the mind of the dental student is apt to be antagonistic to their teachings. If the mind was directed by the dental educators (the men who first meet the students) along the proper channels, it would be receptive and instead of leaving these departments with a superficial, or I might say an artificial knowledge, they would have a foundation on which they could and would develop the future of our profession.

WHAT THE COURSE SHOULD COMPRISE

I am firmly convinced that a complete medical education is absolutely necessary for the proper practice of what the profession of dentistry means to me. In replying to the first question, "When is it best to begin the special studies; during the time of the general medical studies or immeddiately after these?" I will state that the studies of the dental specialist should be postponed until after the medical education is completed. I do not believe that there should be introduced into the medical course any of the special studies of the dentist except those which are already recognized as belonging to the department of medicine. If we introduce any of the special studies during this time we are destroying that which we are trying to accomplish, a complete medical training and the mind of the student is again diverted from the direct pathway. The special studies of the dentist should commence after his medical education is completed and should consist of certain branches of prosthetic dentistry, certain parts of crown and bridgework, the fundamental principles which govern the correction of irregularities of the teeth, and oral surgery. One year should be sufficient for the above named studies. The operative dentistry should consist of a practical teaching of filling teeth, and a theoretical teaching of the composition of the various filling materials. The prosthetic dentistry should consist of how to make artificial dentures, and a theoretical knowledge of the material, eliminating all the antiquated methods of making artificial dentures, leaving this for the dental historians. The crown and bridgework course should be carried along the same lines as the prosthetic course, viz., eliminating the antiquated methods of doing this work, as well as its history.

Have men in charge in these departments who can and will teach the short methods of doing this work. Orthodontia can be taught as it is taught now. I am confident that one year would be sufficient for the proper teaching, as well as the proper understanding of the special studies required of the dentist. I realize that some may say it is unreasonable to believe that one year is sufficient to teach that which at the present time takes three years to teach. In replying I will state that there must be a revolution in the present teaching, and with a medical education the student has already learned all the material, which is now but poorly taught in the dental courses. His mind is more highly developed, as well as his powers of interpretation, not only of pathological, but of all conditions pertaining to the practice a specialty, and the time required for a proper understanding would, of course, be shorter.

To me it seems impossible that a person can learn pathology without a microscopic study of all diseased tissue. How can we understand bacteriology without studying micro-organisms, both in culture media and under the lens of the microscope? How can we understand the subject of immunity and apply the vaccines and sera to the diseases which come under our specialty if we do not understand thoroughly that subject which is already revolutionizing the treatment of disease? There is not in realty, and there should not be in name, dental pathology, dental materia medica, dental neurology and dental hygiene, and numerous other dental subjects which are really a part of the great subjects themselves and are included in them. It is agreed that a great deal of time is wasted in the attempt to teach these subjects, and the shame of it all is that they are taught imperfectly. If we eliminate these subjects and revise the teaching of the dental subjects, then we will have the same amount of time for the dental subjects as we have now, only we have a better foundation on which to base this work, which at most could be accomplished in one year.

THE DAILY SCHEDULE

Saturday morning could be devoted to the orthodontia clinic and Saturday afternoon to the oral surgery, this branch including the extraction of teeth; Monday morning to be devoted to the crown and bridgework clinic; every other morning to be devoted to the practical prosthetic work, and every afternoon, Saturday excepted, to the teaching of practical operative dentistry (filling of teeth, etc.). The treatment of the orthodontia patients subsequent to the visit at the clinic Saturday morning could be carried on during the latter part of the afternoon of the operating days, because it requires in the vast majority of cases, but a few minutes' work. The lecture on operative dentistry, crown and bridgework, prosthetic dentistry, and orthodontia could be given at the first morning exercise, which could be easily arranged at 8:30. Commence the practical work at 9:30 and continue it till 1 o'clock. Resume the afternoon studies at 2 and continue till 6 o'clock.

CONCLUSION

Let us make up our minds to have more of the real, and less of the make-believe. Let us agree on the position we are assuming. If we are highly trained technicians then reduce the hours of study by eliminating the make-believe part of our course. If we are highly trained scientific physicians of special diseases, then let us substitute the make-believe for the real; let us pursue the same course as do other specialists. Why hesitate to add our names to the honor roll, to follow the footsteps of the men who have already spent more time than I have outlined to get that medical education which seems an essential equipment for us to explore those regions which are now darkened by ignorance? The value of the medical education is already proved by the fact that most of the truly scientific discoveries are made by the men and women who have supplemented their dental knowledge with a medical education.

In conclusion let me add those words of Hunter which inspired Jenner to make one of the greatest discoveries in modern medicine, namely, vaccination: "Don't think; but try; be patient; be accurate."

HOW SHALL THE STOMATOLOGIST BE EDUCATED*

By M. H. Cryer, M. D., D. D. S.

Professor of Oral Surgery, University of Pennsylvania, Philadelphia

THE question of medical education for the dentist has been under discussion for many years, and it will probably continue to be a subject of discussion for many years to come. At the first meeting of the International Association of Stomatology, held in Paris, August, 1907, that body settled to its own satisfaction these two points; first, that a complete medical education must be required of every dentist; second, that the word stomatology was defined as meaning diseases pertaining to the mouth. A stomatologist is one who treats diseases of the mouth. In consideration of these two settled principles, the following series of questions was formulated and discussion requested:

---

*Read in the Section on Stomatology of the American Medical Association, June, 1910, and published in THE DENTAL SUMMARY by special arrangement with the Journal American Medical Association.

(a) "When is it best to begin the special studies; during the time of the general medical studies or immediately after these?"
(b) "Advantage and disadvantage of each."
    (1) "Special studies begun during the general medical course."
    (2) "Special studies begun immediately after the general medical course."
(c) "Length of time required for special studies of each system."
(d) "Details of special studies of each system."

As the words dentist and stomatologist, whether intentionally or not, are accepted in the statements as meaning the same, they will be used synonymously by the writer.

If the first settled statement be correct, that "A complete medical education must be required of every dentist," it demands that, in order to become a practitioner of dentistry or stomatology, a man must have a partial or full college education, depending on the medical school he enters, must attend a four year medical course, and according to some authorities he must serve as interne in some good general hospital for one and a half to two and a half years. This constitutes a "complete medical education" according to our leading medical authorities. It is very doubtful if such an education should be required of a dentist. But suppose only the four year course in a medical school be demanded; then the student in this country will have to spend three additional years in a dental school, unless he be allowed one year for his medical education. The best dental schools are advocating four years for the dental education; if this should take place then the student would have another year before he would be allowed to take his examination for a license to practice dentistry. According to this ruling a student must devote six or seven years to his professional studies after he leaves college to qualify for practice. By combining or overlapping the work of the two courses, the time spent can be reduced to six and occasionally five years when the two schools of medicine and dentistry are in the same university.

BEGINNING SPECIAL STUDIES

With these remarks the writer will endeavor to answer (*a*) and will assume that the two schools belong to the same university. If a student wishes to obtain the two degrees in less than seven years, he so announces it to the deans of both schools and arrangements are made accordingly. At the institution with which I am connected, for the past fifteen years the majority of students combining the two courses have entered both dental and medical schools, and the first year have had the same instruction as those studying medicine alone, viz., the fundamental branches of medical science such as chemistry, anatomy, physiology and pathology, together with some dental technics. In the second year a similar plan is followed, with an increase of dental work, and if a student has the ability he can complete the first two years of both courses, though he will not be up to the highest standard of those taking single courses in either school. The third year is devoted exclusively to completing his dental course, and he receives the degree D.D.S. at the end of it.

(*b*) Observe now what happens. It is an important point in the discussion, constituting a great objection to a complete medical training, under the present conditions, for a dentist.

(1) The last two years of the student's time are spent entirely in the medical school and are occupied chiefly in clinical work. He has not time for anything outside of this. He is thus drawn away from dentistry for at least two years. Not only does he suffer from failure to keep up with new dental methods, but his attention is riveted on the wide field of general medicine. All his suroundings are medical. Even in leisure and social hours he is surrounded by medical associates, joins medical societies, etc. By the time he graduates he finds his classmates taking interne service in leading hospitals, and he naturally desires to do the same. The student drops his dentistry with his D.D.S. and becomes a medical man. Case after case can be cited in which this has happened and but few can be mentioned during the last ten years in which a student who has obtained his dental and medical degrees in the institution spoken of, has practiced dentistry or has made a specialty of oral surgery.

Thirty-six years ago the M.D. and the D.D.S. degrees could be obtained from our leading schools in two years and a half. As the course of instruction in the medical and dental schools lengthened, naturally it required longer time to obtain each degree. Fifteen years ago, and even later, a graduate in dentistry from a reputable school was allowed one year on his medical course. But times have changed; a dental graduate today must spend four years in the medical school even if he be a graduate of the same institution, provided he has not combined his studies and taken his work as before mentioned, with that previous understanding.

With this experience, I cannot advocate the plan of taking up dentistry first and finishing with medicine, or of combining the two full courses in any way.

AFTER MEDICAL COURSE

(2) The second question to be considered is "Shall the student begin immediately after the general medical course?" If a student has a college education and has taken a four-year-course in a first-class medical school, it is doubtful if he can afford the time or will have the inclination to spend two or three years in a dental school, as his M.D. will allow him to practice any specialty of medicine which includes the diseases of the mouth. However, from experience, the writer does not believe that this finished (?) product would be best equipped to undertake the work of the stomatologist.

(*c*) Length of time required for special studies of each system. It is difficult to answer these questions which are based on the assumption that "A complete medical education must be required of every dentist," as I am not in favor of this plan as settled by the A. S. I.

In my opinion it is almost useless to discuss this subject unless we can get the co-operation of medical and dental schools. The medical schools of this country have settled, for the present, on certain definite rules by which they give a complete medical education, and are not likely to change their methods for the few dental students who wish a complete medical education. With the exception of the fundamental branches of chemistry, anatomy, physiology, pathology and bacteriology the teaching of the two schools is quite different, and cannot be given by the same teachers.

SUBJECTS MUST BE SEPARATED

In many conversations with teachers of medicine and dentistry, I find it generally considered that a student should not undertake these studies jointly. If he is to study medicine he must do so with all his faculties concentrated in that direction. If he is to study dentistry his mind during his study hours must be occupied solely with dentistry; otherwise he will be second to other students who devote their full time to one subject.

If a man wishes to become a specialist in any branch of medicine, whether it be surgery, gynecology or ophthalmology, it is admitted by all medical teachers that that student must take the general course of instruction first. Then after graduation if he decides to become a specialist he can take special work in the branch he selects. In other words, he must be a doctor first. Now, if stomatology is to become a branch of medicine and require the M.D. degree, the student under existing conditions should enter the best medical college possible and take its full teaching. After graduation if he has not changed his mind, he must take up the special work of the dental profession, which will require at least two years, and for most students it should be three; for there is a very large amount of special work connected with dentistry or stomatology.

The plan of the A. S. I., proposing complete medical education of the stomatologist, can only be carried out by leaving the mechanical work of the dentist to persons trained especially for this work. For stomatology to become a specialty of medicine it would have to be given a place in the regular curriculum of medical schools as all the other recognized specialists are, instead of being left to a separate school of dentistry as at the present time; this would mean a complete revolution in dentistry. The training of the stomatologist would extend his field so much that he would be unable to give time to prosthetic or operative work. He would have full charge of medical and surgical cases affecting the mouth and jaws; not only diseases of the teeth and mouth itself, but constitutional diseases having manifestations in the mouth, such as syphilis and gout, also deformities such as harelip and cleft-palate, malignant growths of the jaws and tongue, injuries of the jaws, diseases of the maxillary sinus and associated pneumatic spaces.

Such work as the filling of teeth and dental prosthesis and the making of regulating appliances would be turned over under the stomatologist's direction, or subject to his prescription, to a man specially trained for each division of this work. His relation to this mechanical associate would be analogous to that of the oculist to the optician, the orthopedic surgeon to the maker of braces, the general practitioner to the druggist.

This idea is being carried even at the present time to a certain extent by leading dentists proportionately as they extend their own fields. Many men have their extraction, prosthetic and regulating work, etc., done by associates under their direction, although in most cases the stomatologist still attends to the filling of teeth; but even this would be dropped if the idea of stomatology as a specialty of medicine were carried out completely.

SUMMARY

My views summed up are as follows:

The primary object in the study of stomatology or any other profession is not the obtaining of this or that degree, but of gaining that special knowledge which will best equip the student for the practice of his profession. To illustrate this point, many examples may be cited of men of high standard in the dental profession who have the M.D. degree, and also those who have not. Both have done and are doing great work for the advancement of dentistry, not because they have this or that degree, but because they have knowledge and the ability to impart it to others and to use it in practice for the good of humanity.

The full medical course is not at present designed to educate students thoroughly in any specialty of medicine. It is impossible to give the student more than a speaking acquaintance with the specialties.

To properly train a student for the practice of stomatology, a special curriculum should be devised consisting of the essential features of both the medical and dental curricula, with the non-essential subjects of both eliminated.

a. To begin with, the student must have a good general education and should have considerable mechanical inclination. If he has not the latter he will never make a dentist or stomatologist.

b. A period of at least two years should be devoted to the fundamental branches of stomatology comprising chemistry, anatomy, physiology and bacteriology, essentially the same as the first two years of a medical course, and in addition, instruction in dental technics and other matters leading to the next period.

c. A period of at least two years devoted entirely to the study of the mouth, including all branches of clinical dentistry and oral surgery. The latter would comprise all diseases relating to the teeth, jaws and associated parts. In this course there would be besides the lectures on oral surgery, ward classes and clinics in a general hospital. At the end of his time the student would receive a degree denominating qualifications to practice stomatology.

d. If the student desires to become an oral surgeon he should then have at least one year as resident stomatologist in a large general hospital, affording practical experience not only in operative and prosthetic dentistry, but also in treatment in diseases of the mouth and jaws, such as tumors, necrosis caused by syphilis, phosphorus and tuberculosis, cleft palate and harelip, fractures, diseases of the maxillary sinuses and associated pneumatic spaces.

With such a course as has been outlined the graduate in stomatology would be fully qualified to practice his specialty and would have sufficient knowledge of the fundamental principles of medicine to recognize and discuss intelligently with medical men the relation of diseases of the oral cavity to general pathological conditions and *vice versa.* This plan as regards oral surgical work has been carried out to a large extent for the past nine years by the combined dental schools of Philadelphia in connection with the Philadelphia General Hospital. This hospital has an oral surgical staff consisting of visiting surgeons from the various dental schools and two graduates in dentistry as internes. A clinic is given once a week by a visiting member of the staff. cases of interest to stomatologists are shown and operations on the face and jaws are performed. The clinic is open to graduates and students of medicine and dentistry, many of whom come from all parts of the world, and has the largest attendance of any clinic in Philadelphia. The internes serve from twelve to eighteen months each and have full charge of all cases in which the face, mouth and jaws are involved. They gain experience not only in their specialty, but by coming daily in contact with medical men and studying general pathologic conditions, their views are broadened and they become ideal members of the profession of stomatology.

(*To be Continued*)

TECHNIC OF A CAST GOLD INLAY*

By A. F. Miller, D. D. S., Sandusky, Ohio.

A CAVITY in the disto-occlusal surface of an inferior, right first molar was prepared for a cast gold inlay in the following manner: The disto-buccal and disto-lingual margins extended to beyond the point of contact. All sharp angles and margins removed, except the gingival portion at which point the surface was dressed off with a fine grit, hard rubber safety. separating disk. This disk being flexible can be extended under the free margin of the gum with little discomfort to the patient. Excavation was extended to the occlusal center, cutting out the sulcus where carious and so formed that the wax impression can be freely withdrawn. The above method of cavity formation presents two advantages: first, as retaining points for the inlay; second, the removal of all sharp angles and margins that would be broken down in the mold by the action of the cast metal against them, thus preventing proper adaptation of the inlay to the cavity. This cause is often erroneously attributed to shrinkage or expansion of the metal. Gently warm the wax for the impression over a flame and press it into the cavity with the finger or flat burnisher, instructing the patient to close the mouth for occlusion. Trim off all excess contouring where indicated, burnishing the wax over the approximal edges and carving flush to the occlusal margins. Chill the wax and carefully remove from the cavity with a small excavator. Carve a horizontal groove in the wax to give vertical anchorage to the inlay. This can be done more conveniently after the sprue wire is inserted. Heat and insert the sprue wire in the approximal aspect of the model and secure it in its position in the sprue former with the point of a wooden tooth pick.

---

*Practical Demonstration given at Ohio State Dental Society, 1909.

The first investment consisted of a small quantity of the Detroit investment compound applied with a soft hair brush, covering the model uniformly to about ⅛-in. thick, extending it down over the sprue former. This is then invested with a second mixture of equal parts of yellow molding sand and plaster, a little sodium chloride added to hasten setting, and flasked in a split rubber tube secured from spreading at the bottom by the flange at the sprue former and by an open metal ring at the top.

After setting, the flask is removed and the wax and moisture eliminated by laying the investment horizontally on a wire screen over a flame on a case-heating stove and applying the brush flame from the blow-pipe on and over the end opposite the gate. This procedure required only fifteen minutes from the time the investment was set, including the casting; the inner investment showing no appreciable change from the high temperature to which it was rapidly subjected.

It is claimed by the demonstrator that the outer investment serves as a protective envelope to the inner against unequal expansion or contraction, thus resulting practically in an inlay uniform and without shrinkage.

The instruments used in preparing the cavity were Black's rapid excavator chisels, a German short, right angle, fissure burr, two sizes, and fissure stone for right angle.

The inlay was cast on a vertical centrifugal casting device designed by the demonstrator.

The inlay was seated, and cemented in the cavity to which it showed perfect adaptation at every point.

LOGIC AND SOPHISTRY REGARDING OPERATIONS IN THE HUMAN MOUTH*

By Edward Eggleston, D. D. S., Richmond, Va.

IN considering the important subject of operative dentistry I shall confine myself to methods of preparing cavities and to the manipulation of substances used in their stopping. It seems to me this subject should be treated on a much broader basis and that all manner of surgical operations about the mouth should be included, but custom, so far, has largely confined the consideration of operative dentistry to methods used in the arrest of decay, or other causes of destruction or loss of tooth substance. I shall also consider briefly, or entirely, methods which I have adopted, and am using daily in my own practice, not, however, because

---

*Read before the Virginia State Dental Society, 1909.

I believe these methods necessarily better than yours, but rather from a conviction that we profit most in these meetings by setting forth our personal views and allowing them freely criticised and compared with other men's ideas and personal experiences. I anticipate a liberal and sharp criticism of what I am going to say, for I fully realize that some of my views are conspicuously at variance with the generally accepted methods of practice.

I will add to these preliminary remarks, that I thoroughly believe in all this paper contains, and that I will be very careful to tell you, accurately, my methods of practice and give you my reasons for the same so far as possible in a paper of moderate length.

In considering the various means of arresting decay and in restoring broken and worn teeth, there are many things which we should consider with great deliberation. Some of these are the dangers of irritation of the fifth or trigeminus nerve and its far-reaching consequences, the danger of causing the death of pulps of teeth and the consequent production of abscesses, the avoidance of pain to the patient, the necessary limitation of nervous strain, not only to the patient but to the operator as well. Then we should consider the best means of permanently restoring the damaged organs to their natural shapes and former usefulness.

Most of these subjects, however, must be left out of this essay in order to limit its length.

I cannot speak too positively of the importance of avoiding irritations. We should consider with great care the danger of thermal shocks to the pulps, first, by never taking long chances by attempting to cap over exposed, or nearly exposed pulps. All exposed pulps should be removed and this operation should be done without pain. Large cavities should never be filled with all metal filling, in fact no cavity should ever be filled with metal alone; if metal is to be used at all, the pulp should be protected from thermal shock by the use of some non-conducting material, and plenty of it, before the metal is inserted.

Here is the list of filling materials which at this time constitute the full quota with me: Two kinds of cement, Harvard, a German preparation, well known to you all, used for all purposes where great adhesion is the prime object—such, for instance, as setting crowns and bridgework, and, with me personally, for attaching most so-called permanent fillings.

The other, Fellowship Cement, is a quick setting, and much harder substance than the Harvard and is used in deep cavities for the purpose of insulation against the transmission to the sensitive pulp of electric shocks and shocks from thermal changes, particularly when the metal alloys are to be used in finishing.

This latter is also often used as a filling in badly broken molars which are to be subsequently capped with gold. Then for permanent fillings I confine myself to the various high-fusing porcelains, Ascher's Artificial Enamels and to two kinds of metal alloys.

In the anterior part of the mouth we should use only materials that will effectually conceal the art, and, at the same time, preserve the teeth from further ravages of decay. These purposes, I believe, can be best accomplished by the use of high-fusing porcelain and the discreet use of Ascher's Artificial Enamel; in fact, I consider that there is no better filling for the molars than high-fusing porcelain, when used with good judgment, and many simple cavities in molars and bicuspids may be successfully filled with Ascher's Artificial Enamel.

To the materials already mentioned I will add the metal alloys which I am in the habit of using.

This completes my present list of filling materials except the use of gutta-percha points in the filling of root-canals. No doubt you have observed that gold has no place in this enumeration. I have, on what appear to me logical reasons, abandoned its use as a material for the stoppage of ordinary cavities of the teeth.

This is what I expect to bring down upon me: more or less of a storm of criticism, unless my hearers deem my position too far out of reason to justify criticism. But the use of gold for such purposes has not suddenly been eliminated, but has passed out of use gradually, losing its place by a slow, and almost unconscious process until about two years ago it practically became an obsolete material, so far as my practice is concerned.

Of course I have not eliminated gold for other purposes, but am using as much, or more, today than I have ever done. It has only been eliminated as a filling for carious cavities.

As I have said, in substance, in the outset of this paper, I fully realize the revolutionary nature of what I am now advocating, and if I had greatly dreaded the criticism of my comrades in practice I would have kept these facts to myself; but believing it our professional duty to tell each other what we are doing, I have knowingly exposed my methods and desire a full expression of your views.

Why is gold an undesirable material for filling purposes? Because, in the first place, it in no respect resembles the tooth structure, neither in color nor in density, indeed, it is about as far away from the tooth structure in these vital respects as any substance that could be selected.

Then again the methods of insertion are objectionable in more ways than one; to begin with, it is almost impossible to hermetically seal a cavity with gold if it is used without cement -we not only get the thermal and electric shocks already referred to, but as we hammer the different particles we get a certain balling to the center, due to its excessive cohesiveness, its malleability and its ductility. If gold be used with a foundation of sticky cement, the cement is necessarily crushed or broken away from its attachments by the long continued poundings, if a mallet is used, or sudden wrenching if the hand pressure system is employed. Then another objection to gold is the frightful tax it imposes upon both patient and operator. This is one of the few conditions in which it is frequently absolutely essential to employ the rubber dam, a great time-killer and an excessively disagreeable practice so far as the patient is concerned.

All of you no doubt have observed how frequently we see discolorations around gold fillings and how often we find a recurrence of decay around their margins Both of these are evidences of a failure to seal the cavity against external influences. Again, I may mention as a further cause for its elimination as a filling material, its unsightliness in the mouth.

To a highly cultivated and esthetic taste gold is almost, if not quite, as unsightly as a vacancy or cavity. Then again we may mention the cost of the material; this of course should not be considered if no other material would answer the purposes better; but as a matter of fact, we may properly urge that as a filling material gold is unnecessarily troublesome in its insertion and certainly unnecessarily expensive.

In considering gold in the form of cast fillings the arguments that I have used against it on account of its conductiveness of electric and thermal shocks, that is to say its density, and on account of its expensiveness, are exaggerated when we come to consider the substance in the form of cast fillings.

I consider a well-constructed, high-fusing porcelain filling by far the most successful and beautiful method ever employed in repairing the ravages of decay. In this material we have more closely approximated the tooth substance in density, in internal structure and in color as well as surface polish than in anything else ever employed.

Porcelain has its limitations, however, just as other substances have. It requires an extremely high degree of skill, the most delicate sense of both sight and touch and the most accurate use of the hands. It requires a great deal of delicate manipulation, and if I may be allowed to say so, it requires a highly developed sense of shade backed up by an accurate judgment regarding the effects of shadows from various directions.

Now I hold that this material is the very best that can be used in anterior fillings that show and in the mouths of patients able to pay for it as well as appreciate its beauty. Now with a poorer class of patients, a class less able to compensate us for our service—beautiful results may be attained with the various colors of Ascher's Artificial Enamel, after we have learned to use it; for there is a great deal to be learned about the proper methods of manipulation in the use of this material, which I am unable to discuss in detail at this time.

It can be used in a great majority of anterior cavities with results, which, when considered from every standpoint, are in my judgment more desirable than those secured by the use of gold.

Now a brief reference to the use of metal alloys in cavities that do not show. If the cavity is deep I use a hard cement, which is pressed to place transforming the cavity to one of moderate depth, then the cavity walls should be coated with a sticky cement after drying and immediately before the insertion of the metal, most of this latter cement should be pressed out by the use of burnishers and all should be pressed away from the margin of the cavity. When this filling has hardened and is carefully polished it is one of the most durable and lasting that can possibly be produced.

Thus I have given you a general outline of my use of filling materials.

I am sorry not to have been able to write with more care and also with greater detail, but it has been impossible for me to give the subject the attention which it deserves.

IS IT DESIRABLE THAT THE DENTIST BE AN M. D.?*

By T. H. Parramore, D. D. S., Hampton, Va.

IT has been hinted, possibly suggested that the Profession of Dentistry would be the gainer in social standing by its adoption into the household of the M. D. S.—that M. D. has a dignity, an eclat not accorded D. D. S. To this suggestion I wish to enter an earnest protest. I do not agree that the facts sustain such a conclusion, nor does history justify such a discrimination.

My experience and observation have proven (to my satisfaction) that being a Dentist (a D. D. S.) secures for a total stranger a position socially and otherwise that would not be accorded him had he simply drifted into the same community without any such recommendation or introduction; in other words, the man without the D. D. S. must prove himself worth the confidence and esteem of the community into which he has settled before receiving such confidence: while the dentist finds this same community anxious to have him prove himself worthy the confidence they are ready to bestow, and starting, from that point of vantage, his future standing among the people with whom he has chosen to live depends entirely upon himself, the life he leads, the character of work he does, whether his influence among them is for good or for evil, etc., as will be the case with any M. D. of equal, moral, physical, intellectual and social acquirements who may settle in the same community.

WHAT OF ITS HISTORY

Heroditus who traveled extensively in Babylon, the remoter parts of Egypt, Assyria, Cyrene and many other countries remote from Greece (probably about the time of the birth of Hippocrates) states that at that remote period "dentistry was practiced in Egypt as a distinct branch of surgery as was also the treatment of diseases of the Eye and Ear." The Dentist, the Aurist and the Oculist were at that remote period specialists in the Medical Profession. In a paper of this character I cannot go into an exhaustive discussion of the history of Medicine to show that as such (a specialty) through the dark ages of Alchemy, quackery, imposture, witchcraft, etc., they came hand in hand, and that the golden nuggets of that dark period recognized the treatment of diseases of the mouth and teeth as a legitimate, organic part of the science of Medicine. In fact,

---

*Read before the Virginia State Dental Society, 1909.

John Hunter (1771-78) who laid the foundation of the English School of Dentistry treated the subject anatomically, philosophically as did Bichat, Blake, Fox, Leonard, Koecker and others; practical, surgical dentistry was an outgrowth of this scientific research just as the anterior splint, the surgical engine, and the almost numberless appliances used in Surgery are the developments of Art to meet scientific demands.

BALTIMORE COLLEGE OF DENTAL SURGERY AND THE D. D. S. DEGREE

Dr. Chapin A. Harris and each of his associates in the establishment, chartering and starting upon a most successful career, had the M. D. degree, and it was no desire or intention upon their part to establish a new degree in Medicine, but the refusal of the University of Maryland to make Dentistry a part of its curriculum drove them to this plan as best under the circumstances.

The history of Dentistry for the last seventy years is such as to cause every member of the profession just pride: she has kept abreast in the wonderful progress the Arts and Sciences have made and added more than her quota to this progress. She has harnessed every new discovery, is in the front rank of Scientific Research and is second to none in the contribution she had made to the health, comfort and happiness of Humanity. With this record it is not natural, nor would the Profession for an instant entertain the suggestion that she appear as suppliant, begging recognition at the hands of any one. We feel that we have as much to offer the M. Ds. as they can possibly give in return. To undertake to create a distinct profession was a mistake in the first place. Dentistry has always been and will always remain a specialty of Medicine and as such should be recognized. In most instances and under conditions as they generally present themselves, I am not an advocate of the trend towards the university idea; eliminate all unnecessary machinery, reduce as far as possible and consistent with giving the very best that can be had, expense; educate along the same lines until it is necessary to specialize and confer the M. D. degree upon no one, no matter what branch of the science he might choose to select, who would not reflect credit upon the great institution that had so honored him. Such an arrangement would have a tendency to produce greater efficiency in the dental profession. A student knowing he would be compelled to pass the medical examination in addition to the special dental examination would be stimulated to greater exertion, his preparation would be broader by reason of which he would be the better prepared to meet the requirements of a practice. Such thorough preparation would give him greater confidence in himself and no greater reward could be meted out to him for the additional time and labor spent in the acquisition of such knowledge than the unquestioning confidence of the community of people among whom he lives. The fact that all dentists were M. D's. would have a tendency to bring the whole profession more closely together, each would get a clearer view and more comprehensive idea of the work of the other. They would be more in sympathy comprehending more fully special features of each case with reference to any particular treatment which would result in the untold good of humanity.

This, in my opinion, is the strongest argument I have heard urged, that dentistry should take its legitimate place as a specialty in Medicine.

THE RISE OF BIOLOGY*

By E. P. Beadles, D. D. S., Danville, Va.

THIS is one of the fundamental sciences, since it embraces every thing pertaining to the structure and development of living organisms, as well as all questions relating to life in its various manifestations.

Modern biology arose in 1860, when the nature of protoplasm was first pointed out by Max Schuetze Bristotle (384 B. C.) made many shrewd observations as to Nature's laws, and anticipated the idea of organic evolution. He knew that drone bees without previous fertilization of the eggs (parthenogenesis), that some sharks develop within the egg-tube of the mother; that the squid carries the yolk sac of the embryo in front of the mouth and he had followed from day to day the changes of the chick within the hen's egg. In embryology he anticipated Harvey in believing that development was a process of gradual building and not a mere enlargement of a previously formed germ.

The next great Naturalist of antiquity was a Roman. These people were great in political power, but were not original. Pliny the Elder wrote thirty-seven volumes on Natural History, but there was little more in them than a compilation, a mixture of fable, fact and fancy. Then came the Dark Ages, when all investigations ceased. All men cited "authority" and gave themselves up to religious worship. The priest held sway over all mankind, keeping whatever learning there was to himself, thus being the better able to impose upon his fellow men. Not until the invention of printing did a revival of learning set in.

In the year 1514 Vesalius was born at Brussels. Early in life he exhibited a passion for anatomy, dissecting small animals. In 1533 he went to Paris to study medicine. His impetuous nature is shown in the Amphitheatre of Syloins, where at the third lecture he pushed aside the clumsy surgeon barbers and himself exposed the parts as they should be. He was not willing to accept all that he found in books, throwing aside authority, he learned at first-hand for himself. In 1543 he published "The Structure of the Human Body." This book laid the foundation of Modern Biology. It created an epoch. Eustachius and Fallopius were contemporaries of Vesalius and did fine work in a more constricted field.

---

*Read before the Virginia State Dental Society, 1909.

*The facts contained in this paper have mostly been gotten from "Biology and Its Makers," by Lacy.

The next prominent worker in this field was Harvey, born at Falkstone, England, in 1578. Having taken his Arts' degree he went to Padua to study with Fabricus, who was perfecting his knowledge of the valves of the veins. Thus began the first study of the circulatory system, the knowledge of which he was so much to advance and amplify.

Harvey's publications were all great; in embryology, as in physiology, he produced a memorable treatise. In his book he showed for the first time ever in print that the blood moves in a circuit, and that the beating of the heart supplies the propelling force. At this time, however, he had never seen the blood passing from the capillaries to the veins, but he knew that it was true.

Next in order come the Microscopists, Hooke and Grew of England, Malpighi in Italy and Leeuwenhock and Swammerdam, both of Holland. Leeuwenhock established by direct observation the connection between arteries and veins. Malpighi in 1661 demonstrated the structure of the lungs, showed the presence of air cells and had a tolerably correct idea as to how the air and the blood are brought together. His greatest work was a monograph on the silk-worm, which was published in 1669.

Swammerdam in 1658 was the first to describe the blood corpuscles. As a dissector of minute parts he had no equal, his instruments were so fine that he could dissect the intestines of bees, with the same accuracy that others do those of large animals. Swammerdam also showed, experimentally, the irritability of nerves, and the response of muscles after their removal from the body.

Lyonet, born at The Hague 1707, must be mentioned as a great dissector. His dissection of the head of the Willow Moth, which is not more than a quarter of an inch in diameter, but in a series of seven dissections he showed all the organs of the head--said to be an extraordinary feat.

We must now mention Cuvier, the great Comparative Anatomist, also John Hunter and Richard Owen; the last introducing into anatomy the important conceptions of analogy and homology.

Meckel was to Germany what Cuvier was to France.

Rathke (1793 - 1860) Muller (1801 - 1858) Gegenbaur (1826 - 1903) were all great Anatomists. In America E. D. Cope (1840 - 1897) was the greatest Comparative Anatomist.

Comparative Anatomy is a very rich subject, and when studied with embryology becomes one of the firm foundations of Biology.

Bichat (1771 - 1801) is one of the foremost men in Biological history. He died at the early age of thirty-one, but his work was epoch making. Buckle says, "We may except Aristotle, but between Aristotle and Bichat I find no Middle Man." He founded what is now known as Histology.

Schwann promulgated the cell theory, but it was moulded into better form by Virchow.. The next great advance in embryology was made by Von Baer (1792 - 1876) who established the germ-layer theory. He was able to show that in all animals except the very lowest there arise in the course of development leaf-like layers which become converted into the "fundamental organs" of the body. Given a leaf-like rudiment, with the layers held out by the yolk, as in the case of the hen's egg, it was no easy matter to conceive how they are transformed into the nervous system, the body wall, the alimentary canal and other parts, but Von Baer saw deeply and clearly that the fundamental anatomical features of the body are assumed by the rudiments being rolled into tubes. Along with the germ-layer came the investigation of the cell, until the egg and the sperm came to be recognized as modified cells. This position was reached for the egg about 1861, when Gegenbaur showed that the eggs of all vertebrate animals, regardless of size and condition, are in reality single cells.

The conception that there is an unbroken continuity of germinal substance between all living organisms, and that the egg and the sperm are endowed with an inherited organization of great complexity, has become the basis for all current theories of heredity and development. So much is involved in this conception that it has been designated by Whitman as the "central fact of Modern Biology." For a definition of a cell, I quote Verworn, though there are others. "A cell is a body consisting essentially of protoplasm in its general form, including the unmodified cytoplasm, and the specialized nucleus and centrosome."

Felix Dujardin (1801 - 1860) made extensive studies in protoplasm, which is designated by Huxley as the "physical basis of life." For illustration we may take one of the simplest of animal organisms, the Amœba. This little animal consists almost entirely of a lump of jelly yet within this substance all the vital activities characteristic of higher animals are going on, but they are manifested in simpler form. They differ only in degree and not in kind from those we see in bodies of higher organisms.

Von Mohl, the botanist, in 1846, discovered the same substance in plants, hence, it becomes known that all life, both plants and animals, originated in the same way and from the same thing.

John Tyndall, (1820 - 1893), ended the long fight concerning spontaneous generation by an experiment which proved that no sterile substance in pure air will develop germs—and thus putrify. Then came the suggestion that disease may be caused by microscopic germs in the atmosphere. The Italian Bassi in 1837 proved that the disease of silkworms was caused by the passing of minute glittering particles from the sick to the well. Upon this basis Henle in 1840 expounded the theory that all contagious diseases are due to Microscopic germs. I need only to mention the names of Pasteur and Koch, as all are familiar with the work of these eminent men in the field of Biology. The first practical application of the knowledge cencerning disease germs was made by Joseph Lister in 1867. He argued that if wounds could be sterilized they would not suppurate. Thus began the greatest benefit to man, after anæsthesia, aseptic surgery.

PRESIDENT'S ADDRESS *

By F. A. Lee, D. D. S., Lynchburg, Va.

AS YOUR president for this term, I welcome you all to this, the 40th annual meeting of the Virginia State Dental Association. To a beneficent and watchful providence we owe it that so many of us are permitted to meet and greet one another again at this time; for this and all other blessings we should be duly grateful.

But it is with sadness of heart that we will have to record the death of two of our members, Dr. Edwin G. Lee of Norfolk, and Dr. John N. Webster of the same place, two of our best beloved brethren, and I would suggest that we have a memorial of them by passing proper resolutions, etc., on their death.

It is with peculiar pride and pleasure that we can look back upon our honorable past and see no stain of any sort on our fair name as a society, and that we can say today with all truth that our course has been "onward and upward and true to the line," and that as we forecast the future we can only see greater and better things for us, if only we keep true to our lofty ideals, carrying out our plans on that high moral plane that has ever characterized our doings in the past.

I keenly feel my unworthiness and unsuitableness to be your fortieth president, and know full well my limitations and shortcomings, and inability to properly fill such an exalted place among you; yet I must say that I yield to none in true devotion of heart to the highest welfare of our honorable profession; and shall endeavor to make up for my failings by earnest devotion to all my duties and heartfelt love to all our members, and my entire willingness to be used for all I am worth in their service, and that while I am painfully conscious that the flesh is weak I am quite as sure that the spirit is willing.

So I trust our coming together at this time will be to our mutual pleasure and welfare, and that we may look back to our meeting with satisfaction. But to make this meeting what we wish it to be and worthy to look back upon with pleasure, we must do our present duty. We stand at "the parting of the ways" in some things, I believe, and it is my hope and belief that we will take the right road; the road that leads to honorable success and to a higher plane and place for our profession.

If this be true, and I think no one will gainsay it, then there are problems to consider and discuss, and plans to be made and carried out, and burdens to be borne and duties to be performed. So let us address ourselves to it with all our God-given energy of mind and body, and look for and secure that good success that comes to honest effort in the right direction.

Now it is not my purpose in any way by myself to attempt to have the things done that should be done, or even to say how they may be accomplished, but simply to suggest some few things that have been on my mind for some time that I am sure are at least worthy of discussion, and if so discussed, then I believe we will come to a final and proper solution of them.

---

*Read before the Virginia State Dental Society, 1909.

And again let me say, I stand ready with all I am and all I have, to do what I can to forward the interest of our society and profession, and as God gives me strength to bear my burden and perform any duty laid upon me.

There are four things that I think we should consider in this or at subsequent meetings and I shall not do more than call your attention to them and express my views, but would be glad to have the society discuss them and either carry them out or dismiss them.

First: The first one I shall speak of is the ever vexing question of a place for our annual meetings. There is as you know a measure of uncertainty about the wisdom of many of our selections of such places and the difficulty of finding a place to please every one. I am dubious about the members who attend simply because it is held at a place that is suitable or pleasant for them, and I am quite sure that those members of our society who have its welfare at heart would go to any reasonable place. I think we should have a circuit of places to meet, in rotation, just as many of our religious bodies do. I had heard that there was such an arrangement in the Georgia State Society, so I wrote to the secretary of that society and got the following information from him. He says:

"I am in receipt of your favor of the 21st inst. forwarded to me here, requesting information as to the Georgia State Dental Society meeting in the same place every year.

"In reply will say that no such action has been taken by our society, but we will make an effort to have a clause incorporated in a new Dental law, which will confine our meetings to Atlanta, Macon and Savannah. We have come to the conclusion that it is not advisable to have the meetings at watering places or summer resorts, unless same are convenient to all parts of the state, which is very seldom. We passed a resolution at our last meeting prohibiting entertainment of the visiting dentists by the profession in the city of meeting—that is as a whole.

"Trusting this information will be of service, and awaiting your further favors, I am, etc."

Now I firmly believe it would be to the best interest of our association to have three or four places in different sections of the state, to meet and take them regularly in rotation. I believe every member who wishes to be of service to the association will be willing to go any reasonable distance to do so and any that would be kept away by reason of the place of meeting would hardly be missed.

Second: The second thing I would like to call your attention to is that I have found in various parts of the state, especially those parts lying nearest to West Virginia, a great deal of complaint of the violation of our Dental laws with reference to the practice of dentistry in our state.

I am quite sure our examining board has done its whole duty and more, but they cannot and are not expected to oversee the whole state and keep out illegal practitioners; but there is a screw loose somewhere and I think it is the duty of our society to look into this matter and see what can be done, and also to see to having it done.

I am not sure, but I think the fault lies largely with the Commissioners of the Revenue. They are not as watchful of the dentist as they are of other people doing business in our state and I have had one of them tell me that it was none of their business if there were illegal practitioners in their jurisdiction, but that some one must report them to him before he could take any action in the matter. I think we should make it public in some way that these fellows shall stop practicing in the state or they will be properly dealt with by law, and also think the Commissioners of the Revenue throughout the state should be given to understand they must do their duty.

Third: The third proposition I bring to your attention is this: I think it is time our association should do something in the way of general instruction of the public as to the proper care of the mouth and teeth.

I know much has been done by individual dentists along this line and much is being done, but there remains this fact nevertheless, there is a dense ignorance prevailing amongst many of the people as to what they should do themselves to preserve the teeth, and much more ignorance about what they should have done by the dentist. The idea is more and more growing in the dental profession that their business is to be more preventive than cure if they do their full duty to their patients and themselves and the public generally.

I believe we should publish some literature on this subject, in our own name or we should endorse some other that we know to be all right, setting forth the fundamental facts regarding the teeth and mouth and the proper care thereof, this to be for general distribution and we as individuals should keep "everlastingly at it," and then I think we should make some effort to have instructions given on this subject in the public schools, and also to have the teeth of the children examined periodically and have them advised as to what should be done, and in case of the poor to provide some way for their mouths to be looked after at small cost.

It may be of interest for us to know what is being done elsewhere along this line, so I will read to you a report of what has been done recently in Cleveland, Ohio.

DENTAL CLINICS IN CLEVELAND PUBLIC SCHOOLS.

Dental clinics are to be established in four of the Cleveland public schools.

This was decided upon at a meeting of the board of education June 7th. The decision followed a statement by Health Officer Martin Friedrich that the teeth of 79 per cent of the pupils in the schools were defective or diseased.

The clinics, which will be conducted by Cleveland dentists without remuneration, are to teach children how to care for their teeth and mouths.

Dr. Friedrich emphatically declared that bad teeth gave children indigestion, induced bad tempers and bad morals, and caused nervous diseases. He said that children with bad teeth were poor pupils.

These statements were reiterated in a communication received by the board of education, which was sent by dentists who represented three dental organizations. The communication was signed by members of the oral hygiene committee of the Cleveland Dental Society, the Ohio State Dental Society and the National Dental Association. These signers, on behalf of the dentists of the city, promised to conduct free dental clinics in four public schools. The board agreed to accept the proposition.

The proposal was as follows:

''First—That you grant us the privilege of going into four of your representative schools, in the city of Cleveland, and without any expense to you, make, under the strictest hygienic conditions, a thorough examination of the oral conditions of the pupils attending these schools, for a comparison with that made by the board of health. The data obtained to be used in educating the public to the need or needs of our public institutions in this line, and in obtaining legislation which will permit boards of education throughout the state to employ regular inspectors, in connection with the school system.

''Second—That as a means of educating the public and to create sentiment in favor of greater attention to the oral hygienic conditions, we will agree to supply to your board competent examiners, without any expense whatever, to go into your schools next fall and make complete examinations of the mouths of the children, under strict hygienic conditions, furnishing a copy of the records found in each individual case, one to the child for the parent, one to the school authorities and one to the dental profession, stating what condition is found and recommending treatment needed.

''Third—We will co-operate with you in the establishment of four centrally located dispensaries for the treatment and care of the mouths of the indigent poor, without expense to you, for the first year.

''Fourth—We will co-operate with you and other organizations interested in the hygienic welfare of the public in the establishment of lecture courses, to be given in your school auditoriums, in the evenings, for the instruction of parents and teachers in the school districts.

''Fifth—We will unite with you and other organizations interested in general hygiene in the institution and adoption of methods which will further the work in this line.

''Sixth—We ask that you take immediate action that we may be able to make our examinations in the schools and in the grades just examined by the board of health department to obtain data which will be of inestimable value to us all, in establishing this work. If this privilege is granted us, we will agree to install a system of examination which will not take any pupil away from his studies for a period longer than five minutes.''

The fourth and last thing I wish to speak of is the great problem that has occupied our thoughts for some time past; that of the recognition of dentistry as a specialty of medicine and surgery.

I had thought ever since our discussion of the subject last summer in Richmond, that there was serious opposition to it in some quarters, and I had found since then some few dentists who were opposed to it; these, however, seemed to not properly understand it and some of those with whom I talked were convinced it was the right thing to do. But I have been informed lately that our very efficient committee on legislation has the matter well in hand and think they can put it through at our next legislature, if this be so, and I have no reason to doubt it, I am truly glad.

I had thought perhaps I might be able to say something to put the thing in its proper light and as coming from the president might carry some weight, but I am glad I need not do this. But permit me to say this not so much as your president, but as a plain every day dentist that really has at heart the best interest of our profession. I am heartily in favor of the movement and would like so much to see our grand old Commonwealth of Virginia take the lead in this matter and am quite sure if she does lead others will follow as they have always done in other matters in the past. I have been told by some that there were difficulties in the way and that the scheme was impracticable. Now I know there are difficulties in the way, but when was there anything worth while to be done that did not meet with difficulties and oppositions, and shall we give up because it may be hard to be done?

This great country of ours is what it is today, because of the trouble and difficulties and oppositions our forefathers met and overcame and there is never anything to be done that is worth the doing that has not got to overcome the obstacles in its way; and then shall we the descendants of these who wrought so good for our country give up a good thing because forsooth there are difficulties in the way?

So I firmly believe that all we need is to push the matter at every point, and we as an association of representative dentists of our state to firmly back up our legislative committee and give them our support and endorsement in every way we can, and if this be done gladly and cheerfully we will soon see the consummation of our hopes and get the success that is our rightful due, and let us ever keep in mind that we are not asking favors of anyone, but are asking for and demanding our simple rights. I think we have fully settled the question as to whether it is the right thing to do, so now let us join hands and work for it till we gain the victory.

And now in closing I wish to express my sincere thanks for and appreciation of the honor you have conferred upon me by making me your president, and also to express my gratitude to all who have in any way assisted me thus far in carrying on the business of our association; especially do I appreciate the work of our Executive Committee and Corresponding Secretary; to them is mainly due all of the success that has come or will come to us on this occasion.

And let me say further that if there is any measure of success or any good whatever done by the association in my term of the presidency I will most gladly take my place again in the ranks to work for and forward its interest in every way I can.

THE SUCCESSFUL DENTIST

HUMANITARIAN DENTISTRY

By W. G. Ebersole, M. D., D. D. S., Cleveland, O.

(*Concluded from page 682, July Summary*)

THE first thing that a beginner in the practice of Humanitarian Dentistry must learn, is that if he is to succeed he must commence at the foot of the ladder and climb up round by round.

The only advantage he has over those who are now meeting with success is that the ladder has been built, and all he has to do is to climb and receive the reward at the top.

Another thing that the beginner in the practice of this kind of dentistry must understand, is that it cannot be learned in a few minutes, hours or days. It requires much time and experience. The men who are its strongest advocates and who are the most successful in practicing it, are men who have devoted years to perfecting themselves in this direction.

In practicing Humanitarian Dentistry, the operator must feel with both real and imaginary pain. He must be as successful in handling one as the other, else he is not a success in this line of work.

Therefore, it is essential that we, in our discussion of this matter, take up both kinds of pain.

The first thing that presents itself to the dentist is the vivid imagination of the patients. This, coupled with the fear and dread most people have of dentists and dental operations, places many of the patients in a condition bordering on irresponsibility. This condition must be reckoned with before attempting anything else.

To gain confidence, and dispel fear, must be the first thought of the dentist who desires to practice Humanitarian Dentistry.

Many men fail here. Most men make light of the patient's fear and lack of confidence, and a large majority of men have no patience with patients who imagine that they are being hurt. Success comes only when these patients are handled in a way which brings them to a position where they are capabe of sound, rational judgment.

This is done in many ways, depending upon the individual case.

First, let your patients know that you are fully aware of their condition and position in the matter, but impress upon them that they have your full sympathy, and that you are just as anxious not to hurt them as they are not to be hurt.

Tell them that in order not to hurt them, you are going to make use of methods and means which make it possible to do their work free from pain, but that in doing this you must have their hearty support. Caution them to notify you the moment they feel the slightest pain whatever.

Make no promise to a patient which you do not expect to keep to the letter.

Cultivate a delicate touch. A touch can be cultivated which is both delicate and firm. A touch so light that it fails to irritate, and yet so full of strength and character that it inspires confidence.

In preliminary examinations, if a cavity is found, that is enough. The knowledge that this cavity exists should suffice. Defer a complete examination as to the extent of that cavity until you have made an appointment to care for that particular case and have plenty of time to investigate and treat existing conditions.

If a patient is suffering, or has been suffering, do not go probing until you have obtained the history of the case. Gain from information furnished an idea of what to expect, whether sensitive dentine, pulpitis, or peri-cementitis. Then proceed in the most cautious manner to confirm this history, and, finding a condition, treat it, using every precaution not to hurt.

If the rubber is to be applied and there is the least likelihood of causing pain in so doing, have your dental nurse or assistant bathe the gums for a few moments with a solution of cocaine, adnephrin and water. If there is still danger of considerable difficulty in placing the rubber cloth, have the time lengthened, and the cocaine solution used until the gums show blanching.

Then proceed with the utmost care not to cause pain in adjusting the rubber. This is of the greatest importance in many cases. Many times have I seen patients in such a nervous state by the time the dam was in place that they were in no condition to be operated upon.

Having the rubber in place, dry away moisture, being careful not to cause pain in so doing.

Cautiously open up the cavity and remove all debris, using sharp chisels and excavators, resorting to the use of the engine and bur as little as possible, until you have ascertained the kind, nature and sensitiveness of the cavity.

Time and space will not permit discussion of the topical application of obtundents.

We should like to lay down a general rule, however, and that is, all topical remedies should be applied warm to sensitive cavities.

Humanitarian Dentistry demands that all pain be eliminated, and a man is a success or failure just in proportion as he is able to do this. Producing pain at one time to avert it at another is not permissible.

If the cavity before us is one requiring more than topical remedies we must next decide which of the remaining methods is best suited to the case in hand.

Following topical remedies, we consider high pressure anesthesia next in importance. The high pressure instruments properly used make it possible to excavate the most sensitive teeth absolutely without pain.

Failure in the use of this method is not the fault of the instrument, unless the operator has abused it by careless manipulation.

The writer discovered a fact which he made public for the first time at Pittsburg, November 7, 1907, and that is that liquids can be forced through the enamel of the teeth with the high pressure syringe. It has formerly been taught that it was necessary to penetrate the entire layer of enamel before high pressure anaesthesia could be employed, but we have been able to demonstrate beyond any question that such is not the case.

It has been said that High Pressure injures the pulp.

There is no more excuse for injuring or endangering the life of the pulp in the use of this method than there is for the physician to injure or endanger the life of his patient in the administration of any of the many poisons that are used thousands of times daily in the treatment of the various diseases.

It is simply a question of dosage. The average dose is administered by the physician and continued, increasing or diminishing the dose, until the desired result is obtained. No two patients respond exactly alike, and in this, as in dentistry, each case is a case unto itself, and as such must be handled independently of all others.

At the moment when that part of the cavity farthest from the point of injection can be prepared painlessly, high pressure should cease if the best results are to be obtained.

Fear need not be created if the anesthetic effect is extended considerably beyond this point.

The pulp may be anesthetized with safety if necessary, but it is only in the most extreme cases that this is required. It is only when overdosage or an improper solution is used that much danger exists.

Much injustice has been done both to Humanitarian Dentistry and to high pressure anesthesia by enthusiasts claiming this method suitable for all cases. It is but one means to an end. With it alone Humanitarian dentistry must needs be a failure.

Not that every tooth in the head cannot be reached and thoroughly anesthetized, but because in our intense desire to prevent pain, we lose sight at the time of other things of equal importance.

There are many cases where I consider it decidedly inhumane to drill an extra cavity which cannot be included in the original one, when other methods at command grant equal immunity from pain without loss of extra tooth substance.

I refer to Cataphoresis and the minor and major general anesthetics.

Cataphoresis? Yes, I will dig up that supposed relic of the past. Bear with me while I do justice to a power which has almost fallen from sight because we, as a profession, fail to understand it, and would not give to it the necessary time to become familiar with the wonderful power for good which it holds and offers to the profession for the seeking thereof, Of the methods for obtunding sensitive dentine it offers most. There is no necessity of making extra cavities nor of bringing about general systemic conditions which will permit the cutting of sensitive dentine without the infliction of pain. Your dosage can be gauged accurately. There is no danger of carrying ptomaine poisoning into the pulp nor of creating depressing systemic conditions.

Except for the time consumed in insulating and obtunding, this is an ideal method.

No man who attempts to practice Humanitarian Dentistry can afford to be without a cataphoric outfit, nor can he be without a high pressure syringe.

Men fail with these because they will not devote sufficient time to study that they may become expert in their use.

The busy man will not take time, because he does not need to do so, while his patients will submit to the old way.

It is in the young men, therefore, that the possibility of Humanitarian Dentistry lies.

I have purposely avoided referring to a local anesthetic produced by a hypodermic injection of cocaine or kindred preparations, because I believe that there are agencies at our command which make it possible to perform all necessary operations without resorting to the hypodermic needle. Of morphine, acetanelid, phenacitine and kindred preparations which act upon the nervous tissue in such a way as to render them partly inactive to stimulation, I cannot, in this paper, take the time to give them due consideration.

Of general anesthetics, nitrous oxide gas is the one par excellence for dental use.

Many substitutes have been offered and with each there have been announcements of great discoveries, but in time all have been compelled to admit that nitrous oxide gas stands in a class by itself as far as safety is concerned. As to the duration of the surgical stage, all depends upon how it is administered and for what purpose.

A number of men are using it with marked success in the preparation of sensitive cavities, placing the patient partially under the influence of the same.

Recently the writer has taken up the use of nitrous oxide gas and oxygen in the preparation of sensitive cavities by placing the patient in what is known as the analgesic state. We have not been working long enough with this manner of procedure to be able to state what the final outcome will be, nor to give you the result of this method of procedure as compared with the use of cataphoresis or high pressure anesthesia.

But there are many places where this method can be used very advantageously, and where time is a question of importance, this method offers most, for with proper apparatus, nitrous oxide and oxygen can be adjusted and administered so quickly that the time element may be reduced to the minimum.

Now, in conclusion, let me say that the demand for anesthetics or obtunding agents in dentistry is far greater than that of the medical profession. A physician may attend his professional duties day in and day out, and not be called upon to perform any act which would cause sufficient suffering to call for an anesthetic. But with the dentist there is not a day that passes but that he will be required to make use of some agent to prevent his patients suffering torture, and therefore, it is the dental profession that should know most about anesthetics and their use.

The failure to use more humane methods in performing dental operations has caused a delay in the dental profession's obtaining proper recognition and standing.

Painless dentistry must come, even as painless surgery came. The hand-writing has appeared on the wall. Let all heed the warning, lest they, too, be destroyed as were the sceptics and disbelievers of old.

It is ours to go forth teaching the doctrine of more humane methods in dentistry until every member of the profession becomes imbued with the spirit of pain elimination, and every dental college in the land is teaching a thoroughly practicable course in anesthetics and anesthesia.

It is ours to spread the gospel of Humanitarian dentistry, preaching these things till every man, woman and child comes to look upon dentistry, as they do on medicine, that is, as simply a disagreeable necessity.

Let us do these things, and humanity, the profession and Providence will bestow upon us their richest blessings.

THE NATIONAL ASSOCIATION

Denver, July 22.—The National Dental association Thursday selected Cleveland, O., as the next meeting place and elected officers as follows: President, E. S. Gaylord, New Haven, Conn.; vice president, Charles S. Butler, Buffalo, and E. R. Warner, Denver; John W. David, Corsicana, Texas; corresponding secretary, Charles W. Rogers, Boston; recording secretary, Dr. H. C. Brown, Columbus, and treasurer, Dr. A. R. Melendy, Knoxville, Tenn.

THE mere resolve not to be useless, and the honest desire to help other people, will, in the quickest and delicatest ways, improve yourself. * * Consider all of your accomplishments as means of assistance to others.--*Ruskin*

EDITORIAL

HOW SHALL THE STOMATOLOGIST BE EDUCATED?

IN this issue our readers will find several articles, by prominent members of the profession, on the subject, How Shall the Stomatologist be Educated? While the subject has been discussed more or less for years, its discussion at the present time seems even more opportune for we are just now passing through a critical period in the development of dentistry. In the past dentistry in general has been looked upon as largely mechanical, but with its growth and development it is presenting a different aspect. The oral surgeon, the orthodontist and the prophylactist, in particular, realize how intimately dentistry and medicine are connected and how the one is fast overlapping the other.

To be able to cope successfully with the present requirements of all phases of dental practice the dentist must have more than a smattering of the fundamentals of medicine. More is required and expected of the dentist of today than of the dentist twenty-five years ago. Fewer teeth are lost. The development of crown, bridge and inlay methods has enabled dentists to conserve the teeth and lessen the necessity for artificial plates. The improved oral and dental therapeutic and prophylactic treatment are not only tending toward the conservation of the teeth but are in a marked degree preventative of diseased conditions and indicate that the trend of dentistry is toward preventive measures, and the public educational movement now taking such root in this and other countries will be a great aid toward this end.

We are entering an era of preventive dentistry and new problems confront us which must be worked out would dentistry be brought to the high plane on which it should stand and the dentist be enabled to prevent diseases instead of spending all his time at repair and patch-work.

The future development of dentistry will require a more minute knowledge, on the part of the dentist, of the human body and its workings in health and disease. We cannot conceive of a dentist knowing too much to cope with the complex problems confronting him, but one can easily see how he will be handicapped by too meager an education.

In medicine the requirements are growing greater and those of dentistry should be no less. Twenty-six of the medical colleges in the United States now require of students as a minimum for entrance, two or more years of work in a college of Liberal Arts in addition to a four-year high school course.

Eighteen medical colleges require in addition to a four year high school course, one year of study in a college.

In thirty-six states the State Boards of Medical Examiners have requirements for preliminary education.

Seven states require one or more years in a college of Liberal Arts in addition to a four year high school course.

Twenty-two states require at least a four years' high school course.

Five states have no standard fixed by law, but give the Boards authority to fix the standard for their respective states.

But two of these states, South Carolina and Oklahoma, have a standard less than four years in high school.

Dr. Alphonso Irwin, who has probably made a closer study of existing dental laws and dental board requirements than any other dentist, says:

"A higher standard of preliminary educational requirements is imperative in order to establish dentistry as a profession in contradistinction to a trade or art.

"A uniform standard of preliminary educational requirements is a necessity of the progressive spirit of the age.

"A high standard of dental training is requisite in response to the urgent demand for greater proficiency."

Some of the dental colleges, notably the bona fide departments of State Universities, are at present considering the subject of higher preliminary educational requirements and have in view at least one year's Academic course in addition to four years in high school, and are considering the lengthening of the dental course to four years.

One year of college training in physics, chemistry and biology, particularly, would undoubtedly be of benefit to the future student of dentistry, and should receive due consideration.

As to how the dental student shall be educated in college, whether as an M.D. or M.D., D.D.S., involves some problems that a united effort alone can solve.

At the present time the dental student is getting credit only for his dental work. No matter what his standing in the medical branches, he gets no credit should he decide to pursue his medical studies after graduating in dentistry. This is not as it should be. The dental student should at least be required to take the medical course of study for the first two years, be subjected to the same examinations as the medical students and then receive credit for having completed that much of the medical course. In this way he would be better grounded in the fundamentals and should he afterward decide to continue his medical studies he would get two years' credit in medicine.

The question of combining the two courses so that the student can obtain the M.D., and D.D.S. degrees in less time than is now required for both separately, say five years, or the one degree of M.D., with the required additional dental training for a specialty of medicine, cannot be settled by any one or a few persons, but must be worked out by the combined effort of our dental and medical educators.

The dentist, or stomatologist, should be educated according to the demands of the time and our colleges should see that this is done and that incompetents are not thrust upon the public to grapple with the vital problems that are confronting dentistry today.

AN INTERESTING EXPERIMENT

THE Cleveland Dental Society and the Oral Hygiene Committee of the National Dental Association are making an interesting experiment in one of the Cleveland schools for the purpose of securing data which will show the value of the practice of oral hygienic measures

Thirty-five pupils have been selected upon whom to make psychological tests to be used in connection with the scholarship, deportment, effort and attendance shown by the school records. The children represent all phases of public school life as far as scholarship is concerned. Most of them, however, are delinquents, or so-called "backward pupils," some being behind in their grades as much as four years. These pupils were selected from the 886 scholars in the school and from those showing the worst oral conditions.

Two psychological tests were made before treatment of the teeth and existing oral conditions, two will be made during the period of treatment, which will extend to the close of the school term, December, 1910, and two will be made following treatment for comparison with the school records taken for six months preceding treatment and six months following the treatment.

The psychological tests consist of:

a—A memory test.

b—Spontaneous association test.

c—Addition test.

d—Association by opposites.

e—Quickness and accuracy of perception.

A nurse or governess has been placed in charge of the class and the members have been supplied with tooth brushes, tooth powder and a glass. The nurse will visit them in their homes during the summer months to see that they carry out their instructions. When the class was organized $100.00 in five dollar gold pieces was placed in the hands of the Principal of the school, in the presence of the class, with the statement that every boy and girl who faithfully carried out the instruction given them in caring for their mouths, would receive a five dollar gold piece on the last day of school before the Christmas vacation.

So far as we are aware this is the first test of the kind ever undertaken. It is certainly a worthy experiment and we shall all look forward to the result with great interest.

THE EVERYDAY HERO.

Some time ago in the New Jersey penitentiary there was a man awaiting the death penalty for murder. He was an Italian and poor, his only possession of value being a gold tooth. This he wanted sent to his relatives in Italy as a memento of him. But when it came to having the tooth extracted by the prison dentist, the murderer quailed. ''It would hurt so,'' he said, ''I'll go to the electric chair and be killed, but I can't stand having the tooth pulled.''

While this may bring a smile to the dentist of the present generation, it was not a mere pose on the part of the man, nor an appeal to maudlin sympathy. He was really in earnest. He could not muster the courage to have that tooth drawn.

The murderer who prefers electrocution to the momentary pain of having a tooth extracted is characteristic of the human race; he knows that from the instant the first electric shock is sent into his body he will feel no more; will never again be called upon to suffer physically. If men in their regular legitimate activities could be sure that the future held no pain for them, many more acts of bravery—professional, business and social—would doubtless be recorded.

All of this brings up the question, What is real courage? Is it rushing into battle, keyed to the highest tension by the great cause for which men are fighting, or is it fighting, day after day, the smaller battles that duty forces upon us? There is an Oriental maxim which reads: ''The true hero is the man who holds on just a little longer than he thinks he can.''

The man of today who has real courage—whether he is fighting with magazine rifle or business existence—is he who ''holds on just a little longer.'' He who does not perform spectacular or sensational feats; who does not face the electric chair of business extinction with equanimity to tremble at the small, continued pains and annoyances of daily life; who fights his battle day after day with quiet courage and a determination to win if he can; but if he can't—to be a brave loser.

The man with real courage is an every day hero.

I believe yet that no man ever lived a right life who had not been chastened by a woman's love, strengthened by her courage, and guided by her discretion.

—*Ruskin*

CORRESPONDENCE

A CRITICISM OF "SOME PHASES OF RIGGS DISEASE"

(*From the March Dental Summary*)

To the Editor of the Dental Summary—

The writer of the above mentioned paper, opens it with a defense of its title—and the use of the term "Riggs Disease"—It seems if Doctors—James Truman, Edwin T. Darby and D. D. Smith—or any other three equally as prominent gentlemen of the profession called Dr. Stewart's attention to his use of the term "Riggs Disease," and all three offer the same disapproval of its use he could have with profit to himself, heeded them and used such a term as means something to the profession today. He could have selected nearly any one of those which he so flippantly passes over as did his "heaven-seeking-man" the several Christian creeds—and have had a term which means far more than the "Riggs Disease" to which he so stubbornly clings. Had he been persuaded to use a scientific term for the disease upon which he is reporting—he might perhaps have been more accurate or scientific in that report. Enough as to the title.

Case 1—Will the writer kindly state what he means by "doctoring for some time on the tissues and dosing her systemically." Will he also state what he means by "salts"—which he gives alternately every hour with phosphate of soda, "in addition to the calomel in half grain doses until effect"—and what time the patient could find to take the calomel—if the "salts" and phosphate of soda are taken every hour—and how long does he think any patient could keep up such "dosing."

Case 3 (page 196) The writer here says—that after having thought of all the drugs "he had ever heard of"—he determined because "nobody knew what *colchicum* did when introduced into the system" that he would use it on a case that he knew nothing about. So he began to administer it "freely"—He says he did not expect any results—and I dare to say that his procedure, with the knowledge he claims he had, did not merit the favorable results he obtained. Will he tell us what he means by administering it "freely." I should like to ask the writer if he ever heard of or saw any work on Materia Medica and Therapeutics—or is he like many dental men, without those medical books in which can be found the knowledge necessary to the medical side of our daily practice? If he had taken the trouble to look up the drug—colchicum—he could have learned of its action "when introduced into the system" and not have experimented upon his patient with a drug which could have caused death by intestinal irritation especially when given "freely"—Simply because several authors do not agree as to the action of colchicum on the urinary solids does not preclude the possibilities of them agreeing upon all of the other physiological effects of the drug.

Within the period of ten years Dr. Stewart has changed his views regarding that much contended question: "Is pyorrhea to be treated as a local disease—or one with systemic influences"—why will he not go a little farther and heed men whom he cares to quote—(such as Talbot and Kirk) and not use the term "Riggs Disease;"—for the spirit of his paper is indeed good.

New York City.

William Cummings Fisher.

ALUMINUM SOLDER, NEW

United States Patent No. 931,523, granted to Zoltin Tomassy, August 17, 1909, gives the following formula for a new solder for aluminum:

Zinc	8 ounces
Tin	8 ounces
Antimony	130 grains
Salicylic Acid	44 grains

The metals are melted together, and the acid then added. The solder is used in the usual manner, but a blowpipe is preferred as a source of heat. —*The Brass World.*

PAIN OBTUNDER FOR EXPOSED PULPS

By Oscar Gertzden, Valparaiso, Chili, S. A.

Make a creamy paste of soda bicarbonate with carbolic acid, with this cover the exposed pulp of an aching tooth, and the pain will instantly cease. This I have tried in hundreds of cases without a failure. To painlessly destroy an exposed pulp, apply a very small quantity of pure arsenious acid mixed with carbolic acid; over this place a portion of the above paste, and seal as you prefer. It is equally efficient in many cases where the pulp is not exposed, but merely irritated. —*Pacific Dental Gazette.*

HARDENING STEEL

Mix two teaspoonfuls of water with half a teaspoonful of flour and one spoonful of salt. The steel to be hardened must be hot enough to be covered with a crust when it is thrown into this mixture. Then the steel is heated to red heat and suddenly plunged into soft water. If the operation has been successful, the steel will come out of the bath with a white surface. —*Zeitschrift fur Zahnarztliche Orthopadie.*

OBITUARY

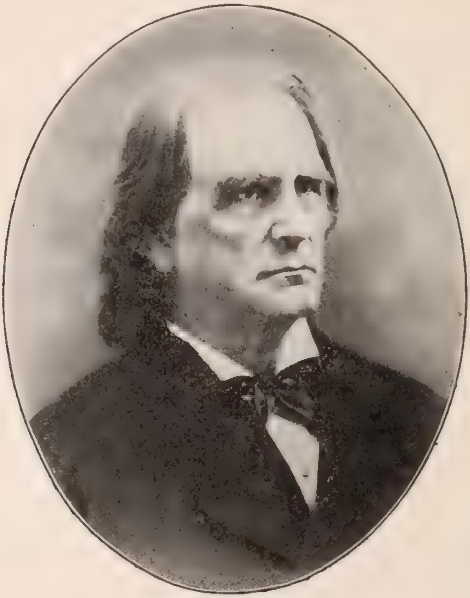
DR. WILLIAM H. TODD

Died at Columbus, Ohio, June 19, 1910 of Aortic Regurgitation, W. H. Todd, D.D.S., in his fifty-seventh year.

Dr. Todd was born in Columbus, Ohio, May 10. 1854, and received his preliminary education in the public schools of that city. At an early age he became associated with his father, Dr. Hiram Todd, who was the first dentist in Columbus, coming to this city from New York City more than seventy years ago. He was graduated in 1882 from the Ohio College of Dental Surgery and continued in the practice established by his father at the old home residence in South High Street, where he enjoyed the confidence and esteem of a large and discriminating clientele, for he was a most pains-taking and skillful dentist, being always in the front rank of the progressive ones. His relation to the dental profession was most cordial. He was kind, courteous and ethical to the highest degree, a prince among gentlemen.

He was a member of the Ohio State Dental Society, always taking a lively interest in its proceedings and an active part in its government, having served on practically every important committee. Was chairman of the Arrangements Committee for seven years, where he did valiant service for the society. Was president of the society in 1895, and was a member of the Board of Directors from 1891 to the time of his death;

was also a member of the Northern Ohio Dental Society, Columbus Dental Society, National Dental Association and an associate member of the New York Institute of Stomatology. He was also largely instrumental in founding the Ohio Dental Library Association, of which he was made president; a society that succeeded in collecting one of the largest dental libraries in the world and having for its permanent home an alcove in the public library at Columbus, Ohio, where it becomes a fitting and practical monument to his memory.



DR. HIRAM TODD

Father of W. H Todd who was the first dentist in Columbus, O., coming to this city in 1839. The office built by Dr. Hiram Todd has been used by father and son as a dental office for more than seventy years

In 1884 he married Miss Flora Barcus, of Columbus, who with two sons, William and Henry, survive him. W. I. JONES.

At a regular meeting of the Columbus Dental Society, held June 28, 1910, the following resolutions, relative to the great loss the dental profession has sustained in the death of Dr. William H. Todd, were adopted:

Whereas, the Columbus Dental Society has heard, with feelings of sincere sorrow, of the death of one of its most respected members, Dr. William H. Todd, a man who so zealously performed every duty that he had won a most enviable reputation in the profession he loved and honored; therefore, be it

Resolved, that in the death of Dr. Todd, the dental profession has lost one of its most valued members, who, in a gentlemanly but forceful way, contributed much to its advancement; and be it further

Resolved, that this society extend to his bereaved family its sincere sympathy and forward a copy of these resolutions to Mrs. Todd; also, that said resolutions be transcribed upon our records and that copies be sent to the dental journals.

W. I. Jones,
H. C. Brown,
A. O. Ross.

DR. C. B. ROHLAND

Whereas, death has claimed our brother, Dr. C. B. Rohland, oldest and best beloved member of this society. Therefore, be it resolved that the members of the Alton Dental Society acknowledge in the death of Dr. Rohland, the loss of one of its most valued members.

Dr. Rohland was always to be found with his shoulder to the wheel, and it has been through the untiring efforts of such men that the profession has reached its present high plane.

We miss Dr. Rohland. We have been so accustomed to go to him for advice, to tell him our troubles, perhaps too seldom to share our joys. To leave such a memory as he leaves in the hearts of the profession, is worth having lived for.

Resolved, that we extend to the bereaved wife and family our sympathy, and that a copy of these resolutions be sent to them and also be spread upon the minutes of the Society.

Alton Dental Society.
Per Committee.

DR. A. H. BROCKWAY

Dr. Albert H. Brockway, a prominent figure in the growth and history of Brooklyn and who for the past fifty years was a well known dentist in Brooklyn, died after a lingering illness Monday at his residence, 13 Greene avenue. During the past fifty years Dr. Brockway was identified with every prominent movement for the social, educational and civic betterment of Brooklyn, and was a well known figure in Brooklyn. In dental circles he was especially influential and he held positions with many dental societies, founding several. Born of New England and Quaker stock in Bridgewater, N. Y., in 1838, he attended school at Summer Hill, N. Y., and the public schools of Syracuse and Rochester, graduating from the Rutgers College Grammar School, in 1854. He came to Brooklyn in 1862 and made his residence here since that date. He was president of the Brooklyn Dental Society for three terms, was a member of the Second District Dental Society, was a former vice president of the New York Odontological Society, was former treasurer of the State Dental Society, was a member of the American Dental Association, and the Ninth International Dental Congress. He was connected with the Oxford and Rembrandt Clubs of Brooklyn and the Portland Club of New York. He was a member of the Brooklyn Library and the Brooklyn Institute. He founded the Brooklyn Croquet Association and was a member of the Second Unitarian Society.

NEWS and OPINIONS

THE EDUCATIONAL MOVEMENT

Now that the greatest heat of the summer is over, and the invigorating days of fall approach, we hope that every dentist will begin to manifest a proper interest in the great movement that has for its aim the education of the people along the lines of dental hygiene and prophylaxis.

Never before has there been such an awakening among the people; never before has there been such an opportunity to popularize our profession and send it into the front rank, where it so richly deserves to stand, recognized by all the world,

This is not true of any other profession. Medicine, surgery and law daily seem to be growing more and more unpopular, as the masses learn more and more how to avoid disease and keep out of legal entanglements; theology long ago reached its apogee, and is now on the decline. But dentistry, as it is seen more and more to be preventive and developmental, is destined to grow in popularity as knowledge of its beneficence spreads over the world.

There are now something near 50,000 dentists in the civilized world; yet probably no more than ten per cent. of the people pay anything like proper attention to the care and preservation of their teeth. Once let the masses realize how much of health and strength depend primarily, secondarily and altogether upon oral hygiene, and the preventive and restorative science and art of dentistry, and this number will be so inadequate to supply the demand that at least 150,000 members of the profession will find ample and lucrative practice.

The educational movement alone can bring about this most desirable result. That it is amply able to accomplish its purpose, results already achieved, although the movement is still in its swaddling clothes, fully attest.

All over the world articles bearing upon this most important topic are appearing in newspapers, magazines and publications of all kinds and degrees of influence. The great newspapers of the United States, as well as thousands of minor ones, are publishing strong articles tending to arouse popular interest, and general knowledge along these lines is correspondingly on the increase.

The lecturer sent out by The Dental Summary, John W. Dowd, L.L.D., estimates the numbers of hearers who have attended his lectures thus far at something like 60,000. From almost every town at which these lectures have been delivered reports have come to us telling of good results that have followed—increased interest on the part of parents and teachers, inquiries from many not previously patrons of dentistry, and not a few immediate engagements.

While there is widespread interest in the movement on the part of dentists all over the country, as very properly there should be, very few dentists have up to date expressed a determination to get into the work in a practical way.

The Summary urges dentists everywhere to prepare to engage in the work in their own particular locality. We have arranged to supply lanterns and slides for evening work, and charts for afternoon work in the schools; and we urge that local organizations everywhere look into the matter at once, secure lanterns, slides and charts, select some one or two men who are best fitted by native ability or inclination to do public work, and prepare to start an active campaign early in the fall.

The Summary is prepared to submit to any who may be interested, manuscript copy of a lecture that has been prepared by an able dentist, which may be used as it is, or referred to as a guide in preparing an original lecture. The lecture is one that we can heartily recommend. It covers a wide field in a popular and interesting manner, and is certain to do a great deal of good.

We are now ready to receive and consider requests for the delivery of Dr. Dowd's lecture, after September 1. He now has engagements at several points for later in the season, including St. Thomas, Ontario, a town which certainly deserves its reputation as the leader in dentistry in Canada. For an active, energetic, wide-awake set of men, we can most heartily recommend the fraternity at St. Thomas.

Address all communications on this subject to The Dental Summary, Lecture Bureau, Toledo, Ohio.

EVANS DENTAL INSTITUTE

Plans for the erection next fall of the Dr. Thomas W. Evans Museum and Dental Institute, a building made possible by the $1,400,000 gift of the late Dr. Evans, at the northwest corner of Fortieth and Spruce Streets, Philadelphia, were announced July 9th. The gift of Dr. Evans, whose career in Paris under the Napoleonic Dynasty brought him the characterization of "the most cosmopolitan dentist in his relations to royalty that has ever lived," will be administered by a board of trustees composed of Philadelphians.

The new institution, which is to be managed in close affiliation with the University of Pennsylvania, will occupy the site of the former home of the donor, who was a graduate of the university.

The buildings will be two stories high, of red brick, with Indiana limestone trimmings. The ground plan will be a capital "H," with one of the long sides of the letter fronting on Spruce Street. The cross bar of the letter will be a tower, 70 ft. in height, in the second story of which the Evans Museum for the display of rare and curious jewels will be located. The dental library will occupy the second story of the Fortieth Street end of the building, while in the western end of the same floor there will be the main lecture hall. The prosthetic operating clinic will be in the north wing of the second floor. Teaching rooms and the offices of the dean and faculty will be on the ground floor. The basement will be given over to the making of molds, the model room, lockers and lunch rooms for the students.

SHAM DENTISTS IN RUSSIA

St. Petersburg, July 6.—According to advices from Smolensk proceedings have been begun against 307 Hebrew dentists for obtaining dental certificates in a fraudulent manner. Those accused include bankers, merchants, commercial travelers and others possessing no knowledge of dentistry. Five medical officials of Smolensk, including two physicians, are accused of conducting sham dental examinations.

UNIVERSITY OF PITTSBURG

At the annual commencement of the University of Pittsburg, held at Carnegie Music Hall, June 15, 1910, the degree of D.D.S. was conferred by the Chancellor upon the following graduates: George Wallace Reighner, First Honor; Harry Trotter Workman, Second Honor; Harry Ramsey Huston, Third Honor: Harry Ray Balsinger, Joseph Haworth Buechler, Herman Leonard Eber, Samuel Dwight Emrick, James Alfred Fordyce, Oscar Henry Goeddel, Reuben Brown Hoover, Charles Everett Manon, Felix Joseph McParland, Harry Marcus Schwartz, Hilmar Florence Sommers, Theodore Straub, Frank Frederick Waelde, Charles Henry Wine, Daniel T. Bowers, Harry Lee Briney, Ross Weir Briney, Harry Smith Connelly, William Ross Hague, William Robert Robinson and Benjamin M. Sapper.

IN MEMORY OF DR. HAYDEN

The Hartford, Ct., Dental Society held its annual outing on Saturday afternoon, July 2, at the club house of the Tunxis River Canoe Club in Windsor, and during the afternoon dedicated a memorial to Dr. Horace H. Hayden, a native of Windsor, founder of the first dental college in the world and first president of the first dental society. The members assembled at the canoe club house at about 12:30 o'clock, many making the trip in automobiles. Soon after reaching the club house a dinner was served. Following the dinner many of the assembly took to the river in canoes, while others played tennis, quoits and baseball. At about 3:30 o'clock the outing feature of the reunion was concluded and the dentists journeyed to the home of Dr. A. E. Cary at the top of Stony Hill, where the monument to Dr. Hayden is erected, for the unveiling exercises.

Dr. Cary presided and introduced first Rev. William B. Cary, who offered prayer. Following the prayer, Rev. Mr. Cary who formerly owned the land on which the monument now stands, presented the deed of the land to the Hartford Dental Society, which was accepted for the committee representing that society by Dr. James McManus of this city. Dr. McManus outlined in a few brief remarks the events which had taken place and the progress of the work in securing funds for the erection of the monument. In closing his remarks he said: "We offer this memorial to Dr. Hayden, father of the dental profession, the recognized American profession." Dr. A. A. Hunt, ex-president of the society, formally accepted the deed for his society. Following the ceremonies in connection with the acceptance of the deed, Dr. Cary introduced Dr. J. Warren Harper of this city, who read the following poem:

IN MEMORIAM OF HORACE HAYDEN

Founder and President of the First Dental College and First Dental Society in the world.

The world has ever lov'd to pay
Her homage to her sons and lay
Her wreath of love with praise o'er spent
On glittering shaft and monument,
And thus recall to other eyes

The honor'd dust that 'neath them lies,
Save if Time's crumbling touch efface
Those virtues which we fairly trace
But better far than carved stone
To make those lasting virtues known
Or tablet to commemorate
Their lives and thus perpetuate.
And so we draw the veil aside
To honor him so long denied
By town and state, and thus atone
For tangl'd grasses long o'ergrown
His mouldering dust, and mark the spot
Unto the passerby long since forgot.
Thus lift we up this honored name
To make atonement and wipe out shame,
That now the world may look upon
Those honors which he rightly won;
While the begrudging hand of fame
Shall yet above his honored name
The laurel place, and cry "Well done."

In introducing Dr. A. J. Flanagan of Springfield, Dr. Cary said that it was Dr. Flanagan who first suggested the memorial to Dr. Hayden. Dr. Flanagan said that he gained his inspiration of the idea from reading the description in a dental journal of Dr. Hayden's life. The matter interested him so greatly that he began a personal search and, assisted by Dr. Charles McManus of Hartford, he was able to secure the history of Dr. Hayden's early life and the story of his life's work. The matter of erecting a memorial was first suggested at a banquet in 1906. In closing he said that he hoped the life of Dr. Hayden would be an inspiration to latter-day dentists and an uplifting influence to the profession throughout the entire world.

The principal speaker of the day was Professor B. Holly Smith of the Baltimore College of Dental Surgery.

THE SOUTH CAROLINA STATE MEETING

The South Carolina State Dental Association closed its annual meeting at Glenn Springs, June 30, with a big banquet. The election of officers was held in the afternoon, and resulted as follows:

Dr. W. W. Chisolm, Anderson, president; Dr. J. B. Brigham, Chester, first vice-president; Dr. Jas. R. Stokes, Rock Hill, second vice-president; Dr. H. C. Smathers, Anderson, corresponding secretary; Dr. W. B. Simmons, Piedmont, recording secretary; Dr. G. A. Milner, Aiken, treasurer; Dr. P. H. Teague, Aiken, editor in chief; Dr. J. P. McCreary, Spartanburg, member of the board for five years.

Columbia was chosen as the place of meeting next year.

Of the 43 young dentists who appeared before the board on the 24th, 36 passed the examination.

INDIANA DENTISTS TILT WITH GOVERNOR

Whether there will be a dental examiner appointed under the recent act of the Indiana Legislature is a question that has not been determined and is decidedly up in the air. Gov. Wilson has refused to appoint either of the men recommended by the State Dental Association on the ground that the association attempted to make the selection instead of allowing the appointment to be made by the Governor. He said he knew neither of the men recommended and had nothing against either of them, believing, so far as he knew, that both were good men, but he did not propose to be dictated to by the dentists of the state.

The law provides that the state association shall select two men to be recommended to the Governor for appointment, and he shall appoint one of these two. The two names were duly determined upon and sent to the Governor. Then he discovered that the association put one man on the list with the understanding that he would not apply for the place. Gov. Wilson said this was an effort on the part of the association to select the examiner instead of allowing him to make the selection and he would not stand for it. He said the Legislature should not have limited the power of the Governor to make appointments by limiting him to two, but he did not propose to have his powers further limited and be required to appoint the man selected by the dentists. Therefore, he has refused to appoint anybody to the place.

GREATER EFFICIENCY DEMANDED

The Vermont State Dental Society will endeavor at the next session of the legislature to have more stringent laws enacted regarding the requirements of the examinations of students for licenses to practice dentistry in the state. The society wants the requirements to be made to conform with those of other states in order that licenses may be interchanged. At the present time interchanging of licenses is only practicable with the states of Iowa and New Jersey, all other states enforcing greater requirements, so that it is necessary for a licensed dentist in Vermont, if he desires to move to any other state except New Jersey or Iowa, to first pass the examinations of that state.

THE OREGON STATE MEETING

The seventh annual convention of the Oregon State Dental Association was brought to a close July 3, after one of the most successful meetings in the history of the association.

The following officers were elected: President, Dr. Wallace C. Shearer, Portland; vice-president, C. B. Littler, Albany; secretary and treasurer, F. H. Walgamot, Portland; editor, H. C. Fixott, Portland; Dr. W. S. Kennedy, of The Dalles, was a new member elected to the executive board, while Dr. E. E. McFarland was re-elected to serve a term of three years.

Action taken some time ago to establish a free clinic in dentistry among the school children by the Portland Dental Society was indorsed by the state association. The Board of Education is in hearty accord with this movement and will assist the dentists in establishing the proposed clinic.

STATE DENTIST FOR WASHINGTON

Dr. E. W. Gilroy, of Seattle, has been appointed state dentist by the board of control on the recommendation of the state dental board, Gilroy being chosen from a class of 40 candidates taking the last examination before the board. His appointment is an innovation. He will visit the several state institutions and care for the teeth of inmates and employes. He is a graduate of the University of Maryland and practiced in Oklahoma before going to Washington.

NEW OFFICERS OF THE PENNSYLVANIA STATE

Harrisburg, June 29.—The following officers were elected today by the State Dental Society:

President, C. C. Walker, Williamsport.

Vice-presidents, Walter H. Fundenberg, Pittsburg; C. V. Kratzer, Reading.

Recording secretary, L. L. Weaver, Philadelphia.

Corresponding secretary, G. S. Schlegel, Reading.

Treasurer, W. A. Spencer, Carbondale.

Council, R. H. D. Swing, Philadelphia, F. D. Gardner, Philadelphia; C. S. Vanhorn, Bloomsburg.

Censors, H. Zimmerman, Annville; D. B. Williams, Wilkesbarre; William L. Keller, Harrisburg; R. J. Seymour, Philadelphia; B. Bordner, Shenandoah.

Examiners, W. D. Delong, Reading; H. W. Arthur, Pittsburg; H. B. McFadden, Philadelphia; J. C. Nugent, Altoona.

EXAMINATION FRAUDS IN VIRGINIA

Richmond, Va., June 25.—Applicants for license to practice dentistry in Virginia will be compelled in the future to accompany their applications with their photograph to eliminate possible fraud by those taking the examination.

This action was caused by the board learning that last year a dental student knowing he could not pass the State examination, paid a New York dentist $30 to come here and take the test for him in the applicant's name. The dentist, it was asserted, passed without difficulty, and gave the student the certificate in return for the fee.

THE MAINE STATE MEETING

At the annual meeting of the Maine Dental Society, which closed June 28, after a three days' session at the Rangeley Lake House, Rangeley, Dr. Ellery P. Blanchard of Portland was elected president of the society. Dr. Blanchard has served on the executive committee of the society for two years, being chairman last year and also held the office of vice-president.

The other officers elected at this year's meeting were: Vice-president, Joseph P. Lancaster, Madison; secretary, Dr. Irving E. Pendleton, Lewiston. treasurer, Dr. Edward J. Roberts, Augusta; librarian, Dr. Dana W. Fellows of Portland. Executive committee, Drs. Archer Jordan, Auburn, chairman; Henry P. Jones, Norway; Wilbur F. Brown, Brunswick; John P. Stanley, Lewiston; W. S. Fogg, Cornish.

The meeting was the best attended and most successful in the history of the society.

A pleasant feature of the meeting was the presentation of a loving cup to Dr. Edward J. Roberts, who has been treasurer of the society for 27 years and a practicing dentist for fifteen years in this state.

An invitation from the New Hampshire and Vermont societies was received to join with them next year in holding the next annual meeting and it is thought that this will be arranged and that the meeting will be held at some hotel in the White Mountains.

THE TEETH AN INDEX OF CHARACTER

Some of the Parisian dentists claim that the character is revealed by the length, shape and spacing of the teeth, and society is grasping at the new fad like a drunken man for the traditional straw. "Dentomacy seances" are already being held in some of the fashionable salons. Here are some of the secrets which the new "science" professes to lay bare: Long, narrow teeth indicate vanity; teeth small, separated and very white are a certain sign of inconstancy and fickle character; long, irregular teeth, projecting forward, are an index of avarice and egotism; small uneven teeth indicate an uncertain disposition, with a tendency to nervousness; untruthfulness is shown by teeth which crowd and overlap. Teeth of medium size, regular and even, the arch symmetrical and gums firm and pink, indicate the character that may be trusted, a generous, loyal disposition, with capacity for deep affection.

DENTAL LAW AGAIN UPHELD

Olympia, Washington, June 28.—Dr. Edwin J. Brown has lost again in the state supreme court in another phase of his litigation with the state dental examining board. In this case Brown was arrested and convicted at Seattle for practicing dentistry without a license. After sentence had been affirmed by the state supreme court, Brown applied to the Thurston county superior court to set aside the conviction on the ground that the dental examining law was unconstitutional and also that the law was void from maladministration by the board. The supreme court in its decision today says that the court has several times before passed upon and held good the dental law. The court says further that the local superior court has no jurisdiction to entertain Brown's application from the fact that no court of equity has jurisdiction to review or to vacate a judgment of a criminal court or to restrain the execution of a criminal sentence.

DENTISTS CRITICISE GOVERNOR DRAPER

During the 46th annual convention of the Massachusetts Dental Society at Springfield, June 18, the committee on registration reported that all but two of the men it had recommended for the State Board of Registration in Dentistry had failed of appointment by Governor Draper. There was a distinct sentiment in favor of renewing the recommendations, and considerable criticism of the Governor's previous action.

Dr. Charles R. Lindstrom, of Boston, was elected president of the society. The next annual convention will be held in Boston.

NEW OFFICERS OF THE GEORGIA STATE

The following officers were elected by the Georgia State Association at its meeting June 17:

President, Dr. George S. Tigner, of Atlanta; first vice-president, Dr. Holmes Mason, of Macon; second vice-president, Dr. W. E. Bugg, of Madison; secretary, Dr. DeLos Hill, of Atlanta; treasurer, Dr. W. M. Zirkle, of Atlanta. In addition, Dr. G. W. Woodbury was elected a member of the executive committee; Dr. S. W. Foster, a member of the fellowship committee, and Dr. H. H. Johnson made journal editor.

A resolution was adopted by which all members became members of the National Association.

Twelve applicants were granted licenses to practice dentistry in Georgia by the State Board of Examiners, June 21. There were twenty-six applicants.

Arthur LeMoine, doing business as the Union Painless Dentists at Little Rock, Ark., has just been mulcted in $750 damages for alleged malpractice. A patient fainted after the extraction of a tooth, and claims that the dentist revived him by throwing a bottle of ammonia in his face, blinding him temporarily, causing the loss of twenty-three days' employment, and injuring him permanently.

THE MICHIGAN STATE MEETING

The annual meeting of the Michigan State Dental Society that took place at Hotel Tuller, Detroit, June 13, 14 and 15, will long be remembered by the members in attendance as the most interesting, best attended and quite the most successful in the history of the Society.

The program was very carefully prepared and well rendered, the discussion showed care and thought, the clinics covered a wide range, and the exhibits were more than usually interesting.

All papers will appear in THE SUMMARY in due time.

The following officers were elected:

D. M. Graham, Detroit, president; W. A. Giffin, Detroit, vice-president; M. L. Ward, Ann Arbor, secretary, and J. W. L. Lyons, Jackson, treasurer. F. W. Howlett and P. F. Hines, of Jackson, were chosen members of the executive board.

We venture the assertion that a better set of officers could not have been chosen. When we noticed that Don M. Graham had been elected president, we were about to say something especially nice; but a glance over the rest of the executive satisfied us that if we did so it would be necessary to write a biography of every one of its members. So we must be content with congratulations all around, and especially to the Michigan State Society upon its excellent selections.

THE FLORIDA STATE CONVENTION

St. Augustine, June 25.—The annual convention of the Florida State Dental Society came to an end here this afternoon after three days of pleasant and interesting sessions, mingled with no end of enjoyable social diversions. Before adjourning today the dentists voted to hold the next annual convention at Pensacola.

At the election, the following gentlemen were chosen: President, C. L. Smith of Pensacola; first vice-president, George D. Young of St. Augustine; second vice-president, J. G. Purvis of Lake Butler; corresponding secretary, W. A. Dean of Tampa; recording secretary, G. B. Tyson of Gainesville; treasurer, C. L. Nance of Tampa. Executive committee, A. S. York of Live Oak, R. P. Henderson of Tampa, J. B. Darsey of Palatka, R. L. Anderson of Plant City, and H. B. Hannah, Jr., of Umatilla.

Dr. J. E. Chase of Gainesville was appointed to read a paper before the Southern branch of the National Dental Association, and Dr. Frank was appointed to present a clinic in the interest of the Florida society.

Pensacola was selected for the next annual meeting place, the convention to be held in that city beginning the third Tuesday of next June.

WARNING TO DENTISTS

A dentist cannot forcibly remove the teeth he has installed in a patient's mouth just because payment is not C. O. D. This is the law in New Jersey, as interpreted by Judge Lewis, of the District Court at Paterson, in the suit of Dr. Wm. Schanyerson against Mrs. Samuel Champagner. Mrs. Champagner testified she paid the dentist $50, and promised an equal amount ''next week.''

''That won't do,'' she said the doctor answered, and thereupon pulled out the upper and lower sets of teeth he had just placed in her mouth.

Judge Lewis held that the dentist had no legal claim until his work was completed.

The Rhode Island State Board of Registration in Dentistry held its last meeting at Providence, and licensed sixteen of the twenty-nine applicants.

The New Jersey State Board of Examiners, at its meeting July 7, detected two alleged cases of ''cribbing,'' by means of printed lists. In the absence of definite proof, the names of those suspected are withheld.

Of 151 applicants, 94 candidates have just been authorized to practice dentistry in Massachusetts. Among these successful applicants are three Maine men,

NEW YORK BOARD OF EXAMINERS

Dr. A. M. Holmes of New York and Dr. H. J. Burkhart of Batavia were reappointed state dental examiners by the State Board of Regents for a term of four years, beginning on August 1st next.

Dr. Holmes is president of the dental examining board and Dr. Burkhart is secretary. Dr. Burkhart already has served 12 years as an examiner.

Dr. E. G. Parker of Poughkeepsie was appointed for a similar term under the law recently passed creating an additional member of the board for the ninth district.

Only sixteen of forty-five applicants examined by the California State Board at Los Angeles, June 28, were passed and given licenses to practice dentistry in the state. Among those rejected are eight dentists holding licenses to practice in other states, who have formed an organization for the purpose of fighting the state Board, alleging that the examinations were not fairly conducted; that the questions were of the ''catch'' order, not calculated to bring out the knowledge of the applicant, but to trip him. Many other allegations are made, and the outcome will be interesting.

THE MINNESOTA STATE MEETING

Recommendations for the two vacancies on the board of examiners were made at the final session of the twenty-second annual gathering of the Minnesota State Dental Association in St. Paul, June 11th. They are Dr. A. C. Fawcette of Rochester, Dr. J. F. McCrea and Dr. R. W. Gerthel of Minneapolis, and Dr. C. A. Robinson of Wabasha.

Officers of the association selected for the ensuing year are: President, Dr. H. D. Lyon Minneapolis; vice-president, Dr. Frank Norris, Winona; secretary, Dr. Benjamin Sandy, Minneapolis; treasurer, Dr. C. W. Benson, Duluth.

Dr. W. T. Joslin, Minneapolis, was selected chairman of the executive council, and Dr. E. T. Tinker, Minneapolis, master of clinics. The 1911 session of the organization will be held in Minneapolis in June.

INCENDIARY FIRE FOLLOWS THREAT

New York, July 9.—A fire of supposed incendiary origin occurred on Thursday night in the dental offices of Dr. T. H. Murray on the two top floors of the four story building at No. 479 Fulton Street, causing a loss of $3,000 to the dental parlors, $300 to a photographic studio on the second floor and $500 to a store on the ground floor.

It is suspected that the fire was the work of a gang of Black Handers, who began to write letters to Dr. Murray two weeks ago, threatening to do serious mischief to him and his family unless he turned over $500 to them through a negro porter.

DEATHS

H. Stanford Burton, an American dentist, a graduate of Harvard, was found dead in his offices at Oxford, England, June 24. Suicide by poison is the verdict of the coroner's jury.

Dr. W. C. Chamberlain, the first dentist to locate at South Framingham, Mass., died June 11, at the home of his son in that city, after a brief illness, aged 76.

Dr. C. B. Rohland, Alton, Ill., July 8. He was widely known as a writer of considerable merit, as well as a skilful practitioner.

Dr. John Aspinwall, Lynn, Mass., July 8, aged 78. Dr. Aspinwall was a union veteran, having served from 1861 to '67. He was in the famous naval conflict between the Monitor and the Merrimac, which settled the northern supremacy of the seas.

Dr. Frederick Emerson Chandler, Everett, Mass., June 23, aged 52. He was the son of Dr. Thomas H. Chandler, dean of the Harvard school of dentistry for twenty years. The subject of this notice was a man of splendid education, a graduate of Harvard and of Tufts. For the past ten years he had confined his practice to diseases of the eye.

Dr. A. H. Brockway, Brooklyn. N. Y., June 21, aged 82. Dr. Brockway was one of the oldest dentists in America and the author of several books on subjects relating to his profession. He opened an office in Brooklyn in 1862. Dr. Brockway was one of the founders and for a time president of the New York Odontological Society, and was one of the founders of the Cremation Society. He was for three terms president of the Brooklyn Dental Society and was vice-president of the New York Institute of Stomatology. He was also a member of the New York Dental Association, the Second District Dental Society, the Rembrandt Club of Brooklyn, the Portland Club and the Brooklyn Institute of Arts and Sciences. He left a wife and one son.

Dr. Milton B. Straight, Buffalo, N. Y., June 27, aged 72. He was probably the oldest practicing dentist in the state, having followed his profession for 53 years.

ROBBERIES

Probably owing to the hot weather attendant upon the vacation season, the grist is not quite so heavy as usual this month. Gentlemen who are able to pick up a living as easily as the gang which is working dental offices and depots certainly have full license to take life easy. Following are the sufferers reported to the date of going to press

Montgomery, Ala.—The offices of Drs. L. Y. Powell, A. A. Pearson and T. A. Cowan, in the Bell building, were looted June 8, and gold to the amount of $100 or more secured. No clue.

Minneapolis, Minn.—Dr. Albin Brodeen lost $200 worth of gold and instruments, stolen from his office June 11.

Lynchburg, Va. June 14.—The Lynchburg Dental Depot was touched to the tune of $2,400 last night, this being the second robbery in three years. Why the loss was not heavier is not known, as goods of the same nature as that stolen of many times the value were allowed to remain undisturbed. It is possible that a third visit is intended.

Des Moines, Ia., June 20.—According to reports received by the Marshall-O'Brien-Worthen company, of Des Moines, dealers in dental supplies, an organized band of thieves is conducting a series of robberies of dental offices in the state. Within a week dentists in two different Iowa towns have reported losses by theft, their offices having been broken into and gold and other precious metals carried away. The thieves removed gold plates and gold filling metals; also dental gold, bridges and crowns in the process of manufacture, and, in some cases, platinum pin artificial teeth.

Asheville, N. C., June 21.—Seven offices in this city and four in Salisbury were robbed Saturday and Sunday nights, respectively, the thieves making a clean sweep of gold and other easily convertible materials. Total loss, about $800.

Chelsea, Mass., June 18.—Dr. David Walper reports the loss of a gold watch, a small amount of money and about $5.00 worth of gold.

Detroit, Mich., June 16.—Exhibitors attending the State Convention were robbed last night, the total value of the loot secured running well over $100.

Jacksonville, Fla., June 16.—Dental offices in the West, Baldwin and Bisbee buildings recently have been robbed by a smooth citizen who works with a skeleton key. Total loss, several hundred dollars.

Stockton, Cal., June 14.—Between Saturday night and Monday morning five dental offices were robbed in this city, the spoils aggregating over $350. No clue—as usual.

Niagara Falls, July 6.—Thieves entered the residence of Dr. G. Musgrove this evening during the absence of the family and looted it of much gold and jewelry, escaping without leaving any clue as to their identity. From the doctor's office they took a bottle of dental gold, sheet gold and gold bands; from the other room they took a gold watch, gold crescent pin, gold locket and chain and other trinkets. Dr. Musgrove is away on a western trip an.. the family had just left the house for a short time.

Bristol, Va., June 23.—The dental office of Dr. Overstreet, in the Pyle building, was entered one night this week and robbed of gold in various forms to the value of $75.

Houston, Tex., June 22.—The office of Dr. A. B. Phillips was entered last night; gold, gold plate and unfinished gold work to the value of $50 were taken.

Some of the members of the dental profession would open their eyes could they look over the files of the Denver Chemical Mfg. Co., manufacturers of Antiphlogistine, and see the many, many requests for window hangers, store advertising, etc., which they are constantly refusing. This company could get an almost unlimited amount of advertising, good advertising too, at no expense, except for the printing of the cards or booklets, if they did not have too great a pride in the honorable position which they occupy as purveyors to the medical and dental professions. Perhaps they feel the ethical requirements of their position more keenly on account of the personnel of the company. Half the members of the board of directors are physicians who have spent each of them many years in active practice, the president of the company being an ex-president of his State Society, and the head of the advertising department is himself a physician, and was for many years the secretary of his County Society.

With such a personnel, it is not surprising that the advertising is not only strictly ethical, but even ultra-conservative in spirit.

A REASON FOR HIGH COST OF LIVING

Facts and figures of a most astonishing nature and of great importance to housewives are given in the August *American Magazine* in an article by Fritz Reichmann, Superintendent of Weights and Measures for New York State. Of the result of some of his investigations in New York City, Mr. Reichmann says:

"The above illustrations are of dry measures, and they must receive the grand prize for instruments of fraud because the bottom can be so easily raised, or decreased in size, and the sides reclapped and false sides inserted. The customer rarely has an opportunity in a filled measure to see the inside, and with any sort of dexterity a crooked dealer can do the trick.

"The prevalence of false dry measures can be easily seen from the fact that two inspectors of the State Department in New York City counted over forty dry quart measures along Second Avenue in New York City in three blocks, all of which resulted in a shortage of over 50 per cent. Cranberry measures delivering 18 cubic inches instead of 67.2 have been very common; white-lined graniteware liquid measures with an inch or two of white paraffin poured into the inside are very deceptive and by no means uncommon. One very prevalent form of weights and measures deception is to sell dry commodities by liquid measure instead of by dry measure. As a dry quart is 20 per cent. larger than a liquid quart the loss due to such practice is evident. But do not be deceived into imagining that because a person is using a small measure he is charging proportionately less, for that is far from being a fact. By far the most desirable method is to buy all commodities by weight, as is customary along the Pacific coast. Yet there are many very 'crooked' scales."

Police Magistrate Peter T. Barlow, who was instrumental in establishing the free dental clinic at 449 East 121st street reports that in the first four months, more than 5,000 children have been treated.

The clinic is an outcome of a letter written on December 15, 1909, to Magistrate Barlow by Miss Marjorie Clark, a Department of Health inspector in the division of child hygiene, assigned to two Harlem schools. Among 6,000 pupils in these two schools, she said in her letter, 85 per cent needed dental care.

This letter accompanied by one from Dr. S. Josephine Baker, chief of the division of child hygiene, stating that out of 323,000 school children examined in the 1908-1909 school year, 183,000 had defective teeth.

Magistrate Barlow sent copies of these letters and a note to 125 of his friends and in twenty-five days had the funds in hand for a beginning.

The Ohio Dental Library Association will hold a meeting Thursday evening, August 18th, in the Dental Library room of the Columbus Public Library for the purpose of electing a successor to our late president, Dr. Wm. H. Todd, deceased, and for the transaction of any business that may be brought before the association.

EDWARD C. MILLS, Secy.,
Columbus, Ohio.

FIFTEEN NEW DENTISTS

The thirteenth annual commencement exercises of the Dental Department of the University of Southern California were held at Temple Auditorium, Los Angeles, Cal., June 16, 1910.

The degree of Doctor of Dental Surgery was conferred on the following graduates: Charles Grant Ashmore, Earl Lionel Clark, Joseph Pettee Copp, Hugh Mortomore Davis, Maxwell Talbot Green, Warren Matthews Hendrickson, Hollis S. Jarvis, John Vincent Maile. Ernest Michael Messner, William Stoneman O'Connor, William Aaron Riggs, Robert Watters Schuessler, Daniel Eugene Turrentine, Roy Meredith White and Milton Titus Whitmore.

On June 8, 1910, in the parlors of the Guilford Hotel, Greensboro, N. C., Miss Monnie I. McIntyre and Dr. S. H. McCall, both of Troy, N. C., were made man and wife. Both have the congratulations and best wishes of THE SUMMARY and a host of friends.

Dr. Carl D. Lucas, of Indianapolis, Ind., one of the oldest and closest friends of THE SUMMARY and its editor, was married on Wednesday, June 29, 1910, to Miss Effie Jeanette Carter, also of Indianapolis. THE SUMMARY wishes to convey to the happy couple its most sincere felicitations on the event.

At the recent meeting of the Section of Stomatology, American Medical Association, St. Louis, the following officers were elected for the ensuing year:

Chairman, Stewart L. McCurdy, Pittsburg; Vice-Chairman, Virgil Loeb, St. Louis, Mo.; Secretary, Eugene S. Talbot, Chicago; Delegate, G. V. I. Brown, Milwaukee; Sub-Delegate, M. H. Fletcher, Cincinnati.

Dr. Ross honored: At the recent Commencement of Scio College, Scio, Ohio, Dr. A. O. Ross, of Columbus, Ohio, was honored by having conferred upon him the degree of Bachelor of Science, a distinction well deserved.

The Supreme Court of the state of Connecticut, in the case of the State vs. William K. Faatz, holds that unlicensed dentists may perform dental operations in the offices of licensed dentists without violating the law prohibiting the practice of dentistry without a license. The case went up on appeal from Norwich, after Faatz had twice been tried and sentenced to pay a fine. The Court holds that performing dental operations by unlicensed dentists, or even by persons who are not dentists, is not the same as practicing dentistry, within the meaning of the law.

COMMENCEMENT WASHINGTON UNIVERSITY

At the forty-ninth commencement of the Washington University, June 9, 1910, the degree of Doctor of Dental Surgery was conferred upon the following graduates. Alphonse Aloysius Arnold, Clarence Wilbur Baird, Robert Ewing Beattie, Dorian Jasper Bentley, Albert Fred Bohn, Fred Welton Brownfield, Sam Allen Joy Carroll, Everett Conway Craig, John Emil Elder, John Mose Elder, Leonard Joseph Huber, Gustavus Jene Krotzsch, Wilheur Dewing Poindexter, Edwin Burnell Probasco, Gilbert Compton Rees, Emil Frederick Rust, John William Schroers, Ralph Almon Sherrard, Louis Philip Thomas, John Charles Triska, Frederick William Troester, Sophie Marie Wachsmuth, Julius Arnold Walther, Clarence Frederick Wettstein, Virgil Richard Wheeler and Harry Clifford Wright.

"CO-OPERATIVE" STOCKHOLDERS "STUNG" AGAIN

About fifteen Waterbury, Ct., dentists are apparently lamenting their experiences with a so-called Borene company, dealing in stock and dental supplies. It is said that a year or so ago practically all of the Brass City dentists were interviewed relative to stock in this concern and about fifteen dentists purchased stock and dental supplies. They were given time in which to pay for their stock and, while payments were being made, dividends of 8 per cent. were paid to these dentists.

Some say that the stock was guaranteed to pay 8 per cent. but strange to say, after various dentists had completed payments on their stock, the dividends ceased. Naturally this aroused the suspicions of those who had subscribed. One dentist, Dr. W. O. Beecher, who subscribed for stock, went to the headquarters of the company and, after considerable expense and delay, managed to get his money back. Others would like to, but fear that it is too late.

Dental and medical examination and service in the Canton, Ohio, schools worked out well last year, in the trials that were made, but since a large part of that service was furnished without cost by Canton dentists the question of finances did not concern the board. The members of the School Board agree that much good would result from introducing such a plan in the schools, but intend to think carefully before recommending the expenditure which would be necessary.

LISTERINE

The best antiseptic for a dentist's prescription

As a daily wash for the preservation of the teeth, and for maintaining the mucous membrane of the mouth in a healthy condition, Listerine occupies a first place in dental and oral therapeutics. Listerine is truly prophylactic, in that it exercises an inhibitory action upon the acid-forming bacteria of the mouth, and thus maintains the alkaline condition so necessary for the welfare of the teeth.

LISTERINE TOOTH POWDER

An innovation, in that it possesses neither fermentative nor harshly abrasive ingredients, Listerine Tooth Powder very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouthwash of Listerine, suitably diluted.

¶The undersigned will be pleased to send supplies of Listerine Tooth Powder samples for distribution to patients, upon receipt of the dentist's professional card, and this advertisement.

Lambert Pharmacal Co., St. Louis, Mo., U. S. A.

Antiphlogistine

TRADE MARK

We are constantly receiving from dentists all over the country testimony to the value of Antiphlogistine in their practice. They use it in all cases of inflamed gums and jaws, and their unanimous testimony shows that a beginning inflammation is resolved while an abscess is always localized, so that it can be opened from inside the mouth. It may be used directly to the gum and on the outside of the face at the same time.

Send for Booklet

The Denver Chemical Mfg. Co.

New York.

Patents Pending

By drawing the bottom cup another comes into position automatically

Aseptic Paper Cups for the Dental Profession

Notice the New Reinforced Bottom Cup

and the new way of packing them in cartons of 25 each, or 100 to the box.

The Dental Cup Bracket

holding 25 cups, is installed handy to the chair, making it very convenient in serving the individual cup.

Patients are not guessing about this cup being sterilized, as they are the common glass.

Hold water at 112°.

Hygienic, Dainty.

Patents Pending

MANUFACTURED BY

American Water Supply Co. of N.E.

251 Causeway St., Boston

EDUCATE THE PEOPLE

TO OUR READERS—Cut out any of the items printed under this heading, take them to your local newspaper and have them printed as news matter.

Great injury has been done to the public health and the advance in oral hygiene delayed by exaggerated tales of the pain incurred by dental operations. Parents and older children should be careful not to over-draw the picture in the presence of young boys and girls. Many of the operations of dentistry are today practically painless, when compared with the setting of broken bones and other surgical operations. Much of the pain actually endured is due to the nervous, expectant, dreading attitude with which the little patients approach the chair. Many of them leave the chair with the most friendly feelings toward the dentist who has relieved them so quickly, and, much to their surprise, without pain. As time goes on and knowledge grows, the visit to the dentist is sure to become as much a matter of course as visits to Sunday-school, and it would be well for parents and teachers to prepare their little charges for it, by telling the simple truth.

Brooklyn and Schenectady, N. Y., are the latest to join the movement looking to the establishment of free dental treatment for those who are unable to pay for it. All over the world the people are realizing that the strength of a nation is in its health, and that there cannot be that degree of health necessary to success in life without a perfect set of teeth.

HAVE YOU A BACTERIAL HOTEL IN YOUR MOUTH?

In the modern movement for the prolongation of life, the stamping out of preventable diseases, building up and keeping up the physical standard and increasing the efficiency of the human organism the Dentists of the United States realize that certain responsibilities rest upon them which they must not shirk if they would keep abreast of the general advance.

That the conditions in the mouth have a tremendous influence over the general health is coming more and more to be understood.

Horace Fletcher says this question occurred to him years ago: "Is it possible that this important section of our anatomy which is practically the gateway of our nutrition, the laboratory of our efficiency has been carelessly overlooked in regard to its basic importance?"

Wood Hutchinson in the *Saturday Evening Post* advises against sucking a wound to extract the poison from it unless you can "give a clean bill of health to your own mouth." What does he mean? He means that the pus germ is very commonly present in the mouth.

"The uncared for human mouth is the prize bacterial garden of the world." Dr. W. A. Evans, commissioner of health for the city of Chicago, who is accredited with having done more for the health of that city than any other living man, in discussing this subject not long ago used these words: "The importance of Diphtheria I am sure is fully understood, but the enlargement of the glands of the neck, of the nose, of the tonsils, of the pharynx are not so clearly understood.

"They are due to absorptions somewhere in the nose or within the mouth; and a large per cent. of those absorptions take place through cavities in the teeth or down the sides of unclean teeth.

"We are constantly confronted with instances like this: A child has been in a diphtheria hospital and remained there till it seemed safe for the child to go home. Then the child has gone home and there has followed an infection of diphtheria in that home. What is the explanation? Simply that in some recess, somewhere in that child there was a focus of hidden bacteria and in all human probability a large percentage of those infections are either in the tooth cavities or somewhere in close connection with tooth cavities."

Thousands of invalids are such on account of faulty condition of their mouths and they can never recover until such conditions are remedied. Disease breeding bacteria are every where present and "the uncared for mouth is to these germs an apartment house with many virtues. It is always warm, softly lighted at times, has a constant supply of running water and meals are served often and in ample quantities. The space between the teeth and the cavities in the teeth are veritable bacterial hotels."

In Providence, Rhode Island, of 1200 pupils examined 95 per cent. had decayed teeth; 46 per cent. had suffered from aching teeth within two weeks; 43 per cent. never used a tooth brush; 37 per cent. used a tooth brush semi-occasionally and 19 per cent. used it at least once a day.

In a number of cities the dentists have opened free public clinics for the purpose of caring for the teeth of those children too poor to have it done. The Cleveland Dental Society numbering more than one hundred members, is maintaining four free public clinics with no expense to the city of Cleveland or the state of Ohio. Each member agreed to give one week of his time or $33.00 in cash to maintain these clinics for one year. Substantially the same thing is being done in other cities.

When teachers notice children who are habitual mouth-breathers they should use their tact and good offices to acquaint their parents with the pernicious effects of mouth-breathing, what it signifies and the possibility of its correction. If you need a text from which to preach a sermonette on oral hygiene use this: "Keep the mouth clean with all diligence for out of it are the issues of life."

If, owing to physical defects such as poor teeth, poor eyes or poor hearing, the average pupil would be graded, say 60 per cent. or 70 per cent. efficiency and that grade, by the removal of these physical defects, could be raised to, say 94 per cent. there would result very great economical gain. In some foreign countries, notably in Germany, and some cities of this country physical examinations are required for the purpose of locating and removing physical defects. If the state has the right to require attendance at school, it has the same right and the same reason to require efficiency. The time may not be ripe yet to make this requirement statutory, for to the public mind it might seem an unwarranted extension of paternalism, but with the co-operation of school teachers the time can be made ripe in a few years.

Until that time comes teachers will be doing a noble service if they devote a little time now and then to teaching their pupils a few things about the care of the mouth and teeth. For common decency as well as health teach them how to use a tooth brush. Few people really know how to brush their teeth properly.

"Decayed teeth make ideal homes for germs with warmth, moisture and darkness. They could not build a better home for disease-breeding germs if they tried. Here they can grow and multiply to their microbic hearts' content.

"We cannot afford to be so careless, as many are, and especially children who are never taught to take care of their teeth and are allowed to grow up with no attention to oral hygiene whatsoever.

"The pus that is often found in the mouth is swallowed, and with injurious effect upon the whole system. Many of the diseases that are prevalent today can be traced in a large degree to the neglect that is shown toward the condition of the mouth.

"The Forsyth Dental Infirmary will soon be built upon the lands of Boston with funds left by a thoughtful benefactor of children, James Forsythe, who expressed much sympathy with children suffering with toothache and other disabilities occasioned by defective oral hygiene. He has made it possible for every child in the future to receive care in this direction. The expense will be met, if the parents cannot afford to take care of this, by the institution itself.

Classified

Advertisements under this heading, $2.00 each for 60 words or less; additional space, 2 cents per word, single insertion; three insertions or more, special rate on application.

AGENTS WANTED—We want a dentist in every state to demonstrate our Dental Specialties. Easy money for good demonstrator. For particulars, address: Metalline Manufacturing Co., 1212 O St., Lincoln, Neb.

WANTED—Dental practices. Big list of buyers. A time tried system that gets the buyers without publicity to the seller. Write for information. Dentists looking for locations write for free bargain sale lists. Mention states desired. The Dentists' Middleman, C. M. Cryor, D.D.S., Box R., Franklin Grove, Ill. 776

WANTED—PARTNER—To buy out old, well-established office, and start first-class advertising office in city of 200,000 population. This is a fine opportunity for a first-class man. For particulars address: 777, care The Dental Summary.

WANTED—POSITION—As manager or assistant in dental office, by a graduate of three years' experience. Have made a special study of casting in all forms. Am at present engaged in institution work. No objection to leaving United States. Can give good references, both as to character and ability. Address: 775, care The Dental Summary.

FOR SALE—An unusual opportunity for a good dentist. Good office and practice in fine county-seat town of 3,500 population in Indiana; large territory and good farming community to draw from; lakes and summer resorts near by, connected by electric cars. A good thing for someone if taken soon. Reason for selling—owner has other interests. Will sell practically at invoice of outfit and furniture. Address: Indiana, 780, care The Dental Summary.

FOR SALE—Practice and furnishings, including Wilkerson chair, Ritter electric engine with Doriot arm and handpiece, Ritter lathe, fountain cuspidor, Allen table and bracket, instrument cabinet, R. & R. mechanical cabinet, No. 6, Wilkerson extracting chair and table, etc. Practice from $3,800 to $4,000; established 10 years; growing city of 12,000 in northern Ohio; best location in city; good reason for selling. For particulars address: B. E. F., 779, care Ransom & Randolph, Rose Bldg., Cleveland, Ohio. tf

CASH FOR YOUR REAL ESTATE OR BUSINESS—No matter where located. If you want to buy, sell or exchange any kind of property or business, anywhere, at any price, address Frank P. Cleveland, Real Estate Expert, 2154 Adams Express Building, Chicago, Ill.

WANTED—A second-hand 3-cylinder Teter Gas Apparatus, with folding base, with or without cylinders. Address, stating condition, etc., 703, care The Dental Summary, Toledo, O.

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX SEPTEMBER, 1910 No. 9

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society
and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. BETHEL, M. D., D. D. S., Editor-in Chief

DISTRICT EDITORS

District	Name and Address	District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.	Buffalo	Dr. J. Wright Beach, 52 North Pearl St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple	Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland	D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Kansas City	Dr. Martin Dewey, Argyle Bldg.	Louisville	Dr. H. B. Tileston, Equitable Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe St.	Memphis	Dr. D. M. Cattell
Los Angeles	Dr. B. Frank Gray, Security Bldg.	Atlanta,	Dr. Thos. P. Hinman, 4th. Nat. Bank Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.	N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.	Richmond	Dr. F. W. Stiff, 600 E. Grace St.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"	New York City	Dr. W. H. Sieberst, 1 W. 34th St.
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.		

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, U. P. U. Countries, $1.75. Advertising Rates on Request

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

A REVIEW OF BRIDGEWORK *

By C. J. Grieves, D. D. S., Baltimore, Md.

THE added impetus given the rather recent crusade for general mouth cleanliness, due to the tardy, but none the less frank recognition by our confreres in medicine, of the stand taken years ago by certain dental pioneers headed by Riggs, who declared "A clean mouth means good health," now typified and crystallized in the words of the great Osler when he said to dentists generally, "You are the keepers of the gate," the awakening of public sentiment in the line of oral hygiene as instanced by the action of state and civic authorities to the end that the child may be spared the results of mouth filth now so common in the parent. All of these and many other reasons call for a review of the methods practiced by the dentist in replacing lost dental organs, that these methods may keep pace with the modern conception of mouth cleanliness.

---

*Read before the Academy of Stomatology of Philadelphia, Feb., 1910. Read before the Northern Ohio Dental Society, Toledo, Ohio, June 6, 1910. Published simultaneously in The Dental Summary and The Dental Brief by agreement.—Ed.

This must not be mistaken for a criticism of bridgework, but rather a declaration that modern bridge methods are the only sensible means with certain reservations named later, for the restoration of lost teeth; it is not a discussion of technique nor of minutia of methods, only insofar as they make for harm or good in mouth conditions.

THE PATHO-HISTOLOGY OF THE TISSUES INVOLVED

The patho-histology of the parts involved is of the first importance. The peridental membrane and the alveolus; the muco-periosteum covering the ridges; the dental pulp and the canal conditions particularly with regard to the apicial cementum, all of these suffering from many lesions calling for the highest skill known to our profession, that the parts may be placed in repair are so complex as to be merely noted in this short paper.

Bridgework has ever, by the laity, been made to bear the onus rightly to be charged to the neglect of the simplest axioms of clean dental surgery. Such for instance as the absolute removal of all carious dentine; the danger to the pulp from thermal changes in large unguarded metal fillings and from the application of irritants; the fact that the dental pulp is infected through the tubuli by caries long before actually exposed; a healthy pulp, or if there be slightest doubt, devitalization with all of the steps necessary to a clean, well-stopped canal; the absolute cure of all apicial infection and the repair of the damaged alveolus resulting therefrom, in short all of the rules which are the "Vade Mecum" of the careful operator and which should be even more sedulously applied to the preparation of abutment teeth.

The life and comfort of a bridge aside from the mechanics involved will be just as the mucosa, the peridental membrane and the alveolus are in health; the latter may be threatened in but two ways, via the gingivus or via the pulp.

It must not be forgotten that normally the fibres of the peridental membrane allow a certain amount of motion to abutment teeth, if occlusal stress be excessive through high cusping, irritation followed by absorption of membrane and alveolus results; a more moderate degree of stress produced by lower cusps and giving a fair degree of exercise will stiffen alike the fibres and the alveolar walls; that the membrane is thick in adolescence and rich in the cell elements; thinner and richer in fibrous elements, hence more rigid, in the adult period when bridges are usually constructed, and that it shrinks by fatty degeneration when senility begins, so a saddle bridge, if done at all at this period, must be carefully watched, removed, reground and reset or impingement with all its sequella will occur.

That this is also true of all local and general conditions which pathologically affect the mucosa, peridental membrane and alveolus, the patient should thoroughly understand, for instance, that during pyorrhoea a bridge is put in as a splint and only as a make shift.

It must be also borne in mind that the dental pulp is an end organ composed of embryonal connective tissue enclosed in a sealed tube of dentine, the tooth, with reparative powers of the lowest type, let the slightest irritation produce extravasation, and it will be its own destructive agent; that it is made doubly inaccessible by the covering abutment crown. That there are no lymphatics to carry off tissue waste; the vessel walls are but one layer of endothelial cells and are affected by all irritants absorbed through the tubuli and are permanently damaged by diapedesis, unlike other capillaries and that they are affected in pyorrhoeal conditions even before appreciable symptoms appear at the gingivus; that after middle life fatty degeneration with necrotic pulp conditions occur which, if by any mischance are exposed to saliva, will produce the most virulent alveolar infections; that pulpitus is frequently induced by shock from excessive grinding to parallel abutment teeth or from the continued thermal changes or irritation from cement after the bridge is set.

Therefore, there can be no compromise on the question of the health of the pulp, it must be regarded as vital, and well protected or promptly removed. The canal must be sealed apically under aseptic conditions by a stopping the equal in every way of the coronal filling, because the apical canal openings are exposed to moisture and infection from the blood stream just as the crown cavity is exposed, only in less degree.

It is also to be recalled that the apex of every root is finished in cementum with frequently other vessel openings than the classical one, forming an active absorptive surface for medicaments which may thus easily go farther than was intended; necrosis of the cemental end of the root dooms the tooth as a bridge abutment, be it from spontaneous pulp death or induced by the operator in devitalization; that frequently large areas of alveolus and peridental membrane destroyed by alveolar abscess appearing superficially correct are never rebuilt in healthy tissue, making the root unfit.

So we might generalize "*Ad lib*" to show that it requires the best of good judgment to say whether the mouth and teeth will even tolerate a bridge and then the very highest type of operative skill to prepare the abutment roots against future infection. Better a thousand times a partial plate or the loss of all the teeth and a full denture than the retention of a few diseased roots keyed to a few good ones by a bridge with localized infection and the daily ingestion of pus or a metastasis by the blood stream and a general pyaemia.

ABUTMENT CROWNS

It is not the intent of this paper to reopen the as yet unsettled question of the types of abutment crowns; of bands fitted cervically versus excision and root copes with posts; there really can be no difference in the gingival irritation whether produced by the cervical over extension of a band or the horizontal extension of a root cope, for both may be correctly adjusted by careful technique.

"A bridge abutment has as its first prerequisite preservation of the organ otherwise good and in part destroyed that the bridge may exist and for its second, absolute fixation that both tooth and bridge may be preserved. The concrete forms of abutment support are the band and post each planned to meet different stress and just as they depart from the position for which they were originally designed so they become weak." ("The Much Abused All Metal Shell:" Va. Society, '05, C. J. Grieves, THE DENTAL SUMMARY.)

In the buccal regions the maximum stress falls vertically—a-splitting stress—in the line of the long axis of the tooth and is best met by bands with flat copes (shells)—or slanting copes (shells faced with porcelain); the lateral stress is slight and may be met by short posts, though we question the wisdom of weakening molar and bicuspid roots to adjust posts; in the labial superior region the stress falls outwardly at a sharp angle to the long axis of the tooth and calls for a root post with copes, concave to the root face always, banded, if you please; in the labial inferior region we have a combination of both downward and inward forces and the post, or the band high lingually to jacket or both may be used.

"The term bridge to the dentist necessarily implies parallelism of abutment teeth and abutment crowns are of value proportionate to the ease with which they can be made strong and still be made parallel. A study of the maxillae and mandible and divergence of tooth roots as compared to tooth crowns; the paralleling of abutments above the gingivae by bands as against that below the gingivae by posts, should go far towards settling this much mooted question." (Ibid)

The salient fault, however, lies not so much in the form of the abutment crown, *but in the adjustment of it;* from beginning bridge work has been erroneously classed as mechanical dentistry, and consigned to the laboratory, where as common sense demands that the abutment crowns at least be built directly on the abutment teeth and roots in the mouth and at the chair; even when the abutments are thus considered as operative dentistry and are adjusted with all of the care of a filling, there is much left to be desired in the final fit.

PHYSICAL STRESS

It has long been common knowledge when a few teeth only remained situate mesially and distally on both sides of the dental arch, that these teeth in the average healthy mouth meet the stress of the muscles of mastication and are apparently firmer for their isolation when no systemic fault occurs.

Following the law of increased nourishment from increased use the peridental membrane become richer in fibrous elements and more certain retainers, the alveolar walls are less cancellated and more dense to the better seating of the tooth roots, and the apical cementum where greatest lateral stress is felt becomes exostosed with no other ill effect than a greater difficulty in removing the tooth.

This is a typal picture of a mouth in which the lost organs are to be restored, the foregoing represents all that nature can do to meet the same amount of stress now falling on a few tools in the machine, and formerly met by the many and it remains for us to not only improve appearances by restoring lost parts, but particularly to so differentiate this force of occlusion over the area of both arches without damage to the remaining teeth as to improve the occlusion by just so many elements as are lost; it is then a question of occlusion particularly and as to which restores lost function the better, the plate or the bridge.

IF THE MISSING TEETH BE REPLACED BY A PLATE

1st. The few remaining teeth are used to stay the denture either by clasps or contact, both of which eventually loosen these retainers, for the impact of mastication will force the comparatively loose denture as a wedge between the adjacent teeth up into the muco-periosteum widening the arch and the morsal surfaces of the occluding teeth will articulate where they did before the plate was applied, viz., on the surfaces of the natural teeth left in the mouth.

If the grinding surfaces of the inserted teeth be high cusped the lateral stress is increased on the supporting natural teeth until they move out the width of the bite elevation loosening both retaining teeth and plate; if they be flat (as they usually are) no appreciable amount of morsal masticating surface is gained over those already in situ and the plate becomes an ornament only.

2nd. Enamel and cemental decalcification followed by incipient caries from artificial retention centers produced by movable tooth contact with the plate always result, these even if met by the best of operative dentistry eventually destroy the natural teeth adding new elements to the plate and weakening the retention. The frequent call for fillings in unusual locations on teeth adjacent to partial plates brands the often heard claim "that a plate may be taken out and cleansed" as an elusive fallacy; that *it may be done* is quite true, but that *it is thoroughly done is equally doubtful.*

3rd. Recessions and often true gingivities are set up in margins adjacent to close plate contact lingually where ordinarily they rarely occur; if the contact be left open the gingivus is pinched and hypertrophies between the cervix of the tooth and plate edge.

IF THE MISSING TEETH BE RESTORED BY A BRIDGE

1st. We are compelled to destroy the enamel on the teeth adjacent to the spaces that attaching abutments may be made cervically snug which ofttimes endangers or destroys the pulp; the enamel is restored by the abutment crown in full contour; the pulps are removed and the canals are sealed aseptically. It is suggested to those critics who decry bridgework that to be consistent they must never do a crown, for a bridge is but a combination of crowns, nor must they ever devitalize and fill a pulp canal, but rather extract and make a partial plate as did the forefathers, then will their criticisms be taken seriously.

2nd. By a union of distant abutment teeth with root apices extending at differing angles in a rigid bar forming the bridge, the individual peridental membranes of which formerly bore the brunt of masticatory stress falling, it must be recalled, first on one side and then the other, now meet a greater stress by just so many teeth as are inserted and the height of the cusps, but just as the bridge crosses the arch and becomes larger, taking in new abutments, so is this stress more evenly divided; for instance, in a full piece, if a movement for mastication is made on the right side not only is it met by the roots on that side, but by all of those roots on the left which are united in the arch of the bridge.

3rd. The abutment crowns if rightly built to contour not only do not impinge on the gingivus, but really protect it from the impact of mastication, as also they should all of the contained tooth or root from recurring caries.

While there can thus be no question that the fixed bridge restores occlusion almost perfectly even if the plate fails to do so, the fixed bridge is a rank failure in the restoration of expression due to unusual absorption of the ridges unless broad saddles be used; these are permissible, in the judgment of the writer, only on removable bridges or bridge plates.

We would accent the fact that just in proportion as the bridge becomes an arch complicated by a greater number of divergent root supports, so will the working and wearing values of it increase; vice versa long straight spans on the same side with parallel roots, for instance, from the canine to the third molar, frequently fail through excess of strain, producing degeneration of the peridental membrane and alveolar resorption.

It is recognized that diverging abutment teeth mean, if perfect paralleling be obtained, oft-times sweeping pulp devitalization; pulp devitalization and clean root surgery without damage to the vital apical cementum and the peridental membrane are the very foundations on which modern operative dentistry is reared; while it may not seem desirable in perfectly normal teeth, the question resolves itself into first, whether we *can do* clean root surgery and *if we can*, next whether a few pulps are to be balanced in value to the whole human economy, as against the masticating powers of a large bridge.

Many short spans simply invaluable for mastication may be constructed in the molar and bicuspid regions and properly adjusted cervically on teeth with living pulps without such sweeping destruction of the tooth structure that abutments may parallel as to endanger the pulp, but there can be no compromise in the mind of the operator, with this paralleling that crowns may fit cervically; it is either grind consistent with pulp health to parallel, or if impossible, pulp devitalization, and if that be impossible, *then do not build a bridge.*

Window crowns, open jackets, cast fillings and bars as abutments are just as doubtful mechanical expedients as are extension bridges swinging free or saddled; only the individual case and the occlusion can determine the correctness of such procedures.

The rearrangement of the occlusion as to cusping, the equalization of all the forces of mastication by the occlusal splinted unit presented to such by the fixed bridge are the very greatest arguments in favor of bridgework, in fact, these are the only excuses we can have for attaching permanently in the mouth an appliance which may so easily violate in a very short time the rules of oral hygiene.

CLEANLINESS OF BRIDGEWORK

Just as retention centres are created by or about the teeth and gingivae from malposition, carious defects imperfectly restored or the ultimate damage to the interdental spaces resulting therefrom, or from any other infection of the gingival margins, so will the mouth be filthy through the retention of decomposing food and tissue.

Any appliance, filling, or even the tooth containing such, stationary in the mouth, is rightly condemned just as it creates retention centers; fixed bridges particularly of the early type, with open so-called "self-cleaning spaces," are to be criticized in this respect.

This, the original method, with the best of intentions, left open spaces in the molar and bicuspid regions, the occlusal surfaces forming a shelf, the facings only touching the ridge cervically; "self-cleansing spaces" sounds theoretically correct and *that is all*, for practically these spaces are neither self-cleansing nor can they be cleansed by the patient.

Further, wherever the slightest edge pressure impinged on the mucous membrane of the ridge or on the margins adjacent to the abutment crowns, gingival hypertrophy occurred, partially or completely occluding these spaces, according to their width and depth, this hypertrophic tissue being quite as objectionable as retained filth.

Anteriorly, the facings due to the interference with speech which open spaces will invariably produce, were perforce set continuously with flat surfaces against the ridge where they gave little trouble if no pressure was made, and after twenty-two years' careful observation in full infirmary and private practice in removing bridges combining thus the buccal and labial regions, the well adjusted, close-fitting labial dummies presented contact surfaces much cleaner than did the open buccal "self-cleansing" regions.

Therefore the position as to mouth hygiene of those who still apply the "self-cleansing" method to bridge construction is simply untenable, for if open spaces are necessary for cleanliness posteriorly they are just essential anteriorly and the close contact anteriorly must be most filthy if the open contact posteriorly be clean, and if has been shown, carefully adjusted and cervically smooth anterior bridge teeth in close contact to prevent the retention of food produce no ill effects on the muco-periosteum of the anterior ridge, why not use the principle on the posterior bridge teeth, as the tissues covering the ridge are histologically identical.

For twelve years the writer has had all fixed bridges constructed with narrow saddles of smooth metal not more than one-third the width of the cusps in the molar and bicuspid regions. These are made of non-corrosive metals with rounded edges set well under the eves of the cusps to prevent gingival hypertrophy by impact of food, which the sharp edge of the saddle if exposed to the bite will inevitably produce; they are adjusted by allowing the patient to wear the bridge uncemented for some time to allow for settling, grinding all pressure points until fine floss silk will barely pass without pressure after the piece is seated.

When perfectly smooth saddles made of platinum or the higher golds are cemented in contact without pressure with the membrane covering the ridges and removed at intervals, it is noted that membrane will appear red without hypertrophy as if the upper and older or corneus layer of cells were missing, a not unlikely conclusion, for if left a day or two this pink, protective layer rapidly returns; and it would appear that the smooth saddle sheltering the membrane from the impact of food, to which it is exposed on bare ridges, takes the place of the protective portion of the membrane.

The metal in contact is covered by a layer of white scum free from food particles, resembling the gingival secretion; this is free from odor, and it is a most interesting fact that while the lingual, buccal and interproximal metal exposed above the gingivae is stained by sulphids from food decomposition, there are no such dark stains on the contact of the saddle nor where bands pass normally under the gingivae; on removal all such may be washed clean and bright as when first placed.

A microscopic study of "The Behavior of Certain Metals in the Mouth," recently reported by the writer (Proceedings National Dental Association, 1909, *Dental Cosmos*, Sept., '09) shows in all vulnerable metals, such for instance, as 18 k. gold solder made with zinc, a line of pits of corrosion at the point just above gingival contact and exposed to decomposing food and no such corrosion, but bright clean surfaces under the gingival margins and wherever metals even as vulnerable as german silver were in close, but not irritating, contact with the mucous membranes of the ridges.

It is thus assured that the mucous membranes when in actual (not irritative) contact secretes something protective to otherwise vulnerable metallic surfaces; the fact that these metals suffer just as does the tooth in any open retention center, holding decomposing food, and the further fact that on the vulnerable saddles examined, which were in close contact with the mucosa, there was no corrosion nor sulphid staining, but the open points such as lingual retention centers were sulphid stained and corroded, shows that while there was decomposition lingually and buccally or wherever retention centers occurred *there was no retention, hence no decomposition, hence no staining under the saddle in direct membrane contact.*

We can readily explain these phenomena by the chemiotactile process constantly going on to the protection of the mouth mucosa which long have been known to possess a greater degree of immunity than any other body membranes; it is unnecessary to more than mention the wonderful recuperative powers of the mucous membranes to dentists who have so many opportunities for observing them. It is supposed that due to unequal pressure conditions, and to continued exposure of the mouth mucosa to great numbers and varieties of bacteria, some of which are always invading these membranes, there are forced to the mouth epithelia more than the usual number of phagocytes which line up directly under the membrane where they stand ever ready to produce a local phagocytosis on the slightest notice; it is the writer's idea that the smooth non-irritating contact of a non-corrosive saddle is kept clean and free from decomposition by the process of chemiotaxis of the phagocytes; just as the same metals are protected when extended under the gingivae without irritation, the slightest occurrence of which will produce the worst kind of decomposition and deposits on the metals.

This is not a plea for saddles as they are usually applied for mechanical support, but for narrow, smooth saddles for cleanly contact. Broad saddles for support when not removable sink their way into the muco-periosteum with edges producing hypertrophy and do great damage which only the removal of the saddle will relieve.

It must be recognized that there are many dangers incident to the hasty setting of the narrow saddle bridges recommended in the mouth.

First, due to even a slight difference in parallel of abutments the bridge should be worn loose and allowed to settle, adjusting, grinding and polishing all contact points; particularly is this true of cases where it is necessary to open the bite and where pressure from the unduly contracted muscles of mastication is constant on the bridge.

Second. Ample space should be to cut before the bridge is set between the cervices of the dummies directly adjacent to the abutment crowns and the margins of such to allow these margins to be adjusted and to prevent the gingival hypertrophy always produced in these regions.

Third. In setting such bridges the attaching cement may flow under the saddle and quickly become a source of infection; this must be met by greasing all exposed parts of the bridge and wrapping each interproximal space with floss, which after the bridge be set, may be swept back and forth dislodging cement excess.

Fourth. Great judgment should be exercised in selecting only such cases as present normal mucosa and healthy peridental membranes in the abutment teeth.

REMOVABLE BRIDGES

It has been shown, first, that when a bridge *is fixed it has its greatest retentive values* and second, that *fixed bridges may be made clean in normal cases* and the writer would apply the removable method to only such cases which for lack of abutments or disease of the mucosa cannot be accomplished in any other way; we thus sharply classify removable bridges into those removable at will by the patient and those removable only semi-occasionally by the dentist, because of the differing effect on the abutment tooth membranes.

When the bridge is fixed and removable only by the dentist it has all the mutual supporting values common to fixed bridges, and does not by its removability damage the abutment tooth membranes; the greatest ingenuity has been displayed in constructing the fixed removable bridge and it may be utilized in rare cases, but it is most objectionable because its use is a tacit admission that a bridge set in the mouth is unclean and if the only reason for its removal be uncleanliness, then it is filthy at all times except when out in the hands of the dentist who removes and replaces it; a condition contrary to every idea of oral hygiene.

We must all pay tribute to the wonderful skill displayed and the precise mechanism developed in producing the multitudinous types of abutments for the attachment of bridges removable by the patient; it is the writer's misfortune that he has yet to apply or see some time after application, one of these devices, but what under the stress of occlusion or the movements made in removing and replacing it had either damaged the fine mechanism of the device or what was far worse, produced resorption of the peridental membrane and alveolus loosening the teeth retaining the abutments.

This is what might be expected physiologically; if the teeth were not vital organs set in a bony tissue subject to trophic resorption from lateral pressure, if the fibres of the peridental membrane did not permit a certain amount of sway to the tooth allowing the bridge to settle between the abutment teeth moving them apart as a wedge just as a plate will do, the bridge might be removable and move in mastication without damage, but such is not the case, in a short time the movements of mastication are magnified by the appliance, permanently damaging the peridental membranes and the alveoli; by its very removability the removable bridge destroys itself in time.

When the retention afforded by the few abutments is supplemented by the addition of wide saddles which, after they settle into the mucro-periosteum furnish tangible support, the peridental membranes are spared much undue strain; the rule being the same as for plates, i. e., the broader the saddle the firmer the piece, and the removable bridge becomes more permanent.

Further, if these saddles be extended to cover in part or wholly the hard portions of the palate and broadly on the lower ridges this supplementary support is greatly increased and we have in fact a plate which attached to a few removable bridge abutments produces a removable bridge plate; in the writer's experience a far better method for replacement of teeth than the removable bridge.

The removable bridge plate is ideal; just as tissue lost from excessive absorption is to be replaced restoring expression, or if the occlusion has to be increased and extended, the plate in contact with the soft parts may be extended. In a word, it combines all of the good points of the plate, restoration of expression and appearance, which the bridge lacks, at the same time protecting the adjacent teeth from the damage usually done by partial plates and supplements the extra strain found in the removable bridge by the cushion formed on the hard parts under it.

BRIDGE MATERIALS

Porcelain stands pre-eminent as the only material at hand both for appearance and invulnerability to action of mouth contents for bridge construction. Anyone who will take the trouble to grind a few sections of the best fusing he is able to make by the methods now in vogue and compare such under a low power glass with similar sections cut from best porcelain of the manufacturer will find that the latter is decidedly more dense and compact, freer from blow holes and hence will meet stress much better than anything the dentist can produce. This, no doubt, is due to the lack of pressure which the manufacturer is able to apply in moulding tooth forms.

All porcelain bridges are fused on a frame work of platinum and iridium spanning from root to root; it has been proven that it is impossible, due to a difference in coefficients, to fuse porcelain down to a platinum without microscopic cracks; that these cracks are an element of weakness in manufactured teeth and that they become microscopic and a serious menace to the strength of the bridge just in proportion as the areas of the metal to which they are fused are increased, hence the greater the amount of supporting framework, unless this be all metal, the weaker the piece; to illustrate, the minute cracks about the fused in pinheads of a well-made facing may produce little damage if not exposed to heat again in soldering; the large cracks found centrally about a platinum and iridium bar, the only mechanical support of a porcelain bridge span, are damaging just in inverse ratio to the amount of the porcelain; in short bite cases with a small amount of porcelain in the dummy the cracks are the same with less body interposed between the bar and occlusal stress; in open bite cases where the cracks are still the same, there is greater bulk of porcelain about the bar, hence greater strength.

This is not saying that porcelain bridges cannot be made as successful in the hands of experts as other varieties, *it is stating a physical fact* which becomes evident in the wear of such bridges, for the continued stress of mastication produces cracks in the body directly above the fusing cracks about the frame; the whole force of the bite now falls on the frame which soon "sags," calling for repair. This is impossible in the mouth and well-nigh impossible out of the mouth, for nothing can be added to the metal by soldering and it is difficult to fuse permanently new porcelain to the old, which is porous and saturated by the mouth secretions. So we are compelled, much as we might desire to employ porcelain for the bulk of the bridge, to use a non-corrosive metal not so friable and with greater ductility and tensile strength: this we find just as it has been lately found in the operative field to be high grade gold which *will* meet bite stress and to which may be attached for appearance porcelain teeth.

The difficulty of combining these differing materials with strength in the union sufficient to meet occlusal stress has been fully discussed by the writer in another paper (The Porcelain Facing Checked, Causes and Remedies, New York State Soc. *Dental Cosmos*, March, '08). It is sufficient to say that porcelain facings by suitable technique can be attached even in short bite cases to the metallic bulk of the bridge by soldering, with little increase in the microscopic cracks common to all; in the medium and open bite cases, some cementing media should attach the porcelain, of the removable type, if possible, in a fine mechanical joint to the metallic frame of the bridge and wherever possible, the porcelain should not be exposed to the flame, as it decreases in strength one-third and it needs support rather than furnishes it.

In combining metals to be exposed an indefinite time to the mouth environment care should be used to employ only noble metals, as any combination with a base metal, as zinc in solders, will produce degeneration by electrolyses, and in a little while smooth surfaces will be full of crypts and unclean: it might also be noted that borax pits from soldering are filthy if neglected before setting the bridge.

THE BRIDGE AS A SPLINT

All diseases of the gingivae and peridental membrane, thanks to newer methods and prophylactic operators, are responding to treatment with results little short of marvelous when viewed from the standpoint of a few years past. These operators, however, should not persist in retaining, in their enthusiasm, teeth which disable the whole occlusion.

It is at this juncture that the fixed bridge as a splint has its greatest value. "There is no device which so thoroughly meets such trying requirements, splinting, replacement and rearrangement of the occlusion as the judiciously constructed bridge; it is the most hygienic form of retention yet introduced and the greatest protection to the soft tissues; it enables the operator to remove impossibly lame teeth with interdental spaces, a constant source of filth, and to replace the same with dummies saddles for contact and cleanliness and contoured to protect the underlying tissues. There can be no question that in the molar and bicuspic region after pyorrhoea is established the occlusion should be altered following evolutional laws of change to suit new conditions, from deep to flat cusping. This is possible only with the bridge, supplying occlusion when lacking, relieving it when excessive, and correcting it when irregular. ("The Bridge in Pyorrhoea," *Dental Cosmos,* Jan., '04, C. J. Grieves.) It is a happy coincidence that the often necessary expedient of pulp devitalization that bridgework be accomplished, is confirmed by the recent research and clinical observation in pyorrhoea; as has been noted before, the pulp early in pyorrhoea degenerates; clinically it is a fact that teeth free from pulps before the onset of this disease do not loosen.

"It is the writer's firm conviction that the return to health of a denture disorganized by pyorrhoea can be more readily accomplished by pulp devitalization, clean root surgery, cleanly fixed bridgework as a splint and the healthy exercise it guarantees the teeth alveoli and associated membranes than by any other known means." (Ibid.)

(*To be continued.*)

THE PUBLIC DUTY OF THE DENTIST*

By B. Holly Smith, D. D. S., Baltimore, Md.

EVER since the days of Cain the question, "Am I my brother's keeper?" has been asked and found answered in organized and individual effort for the protection and uplift of mankind; in the betterment of his social, religious and physical conditions. Philanthropists have built hospitals, almshouses and churches; colleges and other institutions of learning have multiplied, that man may be trained in the art of living and serving his fellows. Lawyers and statesmen have drafted statutes which, when enacted into law, restrain and punish the vicious and wicked, or give greater scope to the civil and religious liberty of the citizen. Scientists and physicians have made plans for sanitary living, for the prevention of the spreading of contagious diseases, and the purification of the food supply. Farmers all over the country are making an organized effort for good roads, merchants and commercial organizations vast plans for the extension of commerce and the increase of manufactures. In fact, the world is teeming with one grand musical poem in affirmation, "I *am* my brother's keeper."

What contribution to this vast, almost universal, effort is the dentist of today making? Is there any opportunity for him to contribute to it? Is his social or political position in his community such as to make him the authoritative dictator of mouth sanitation? These and other questions confront us today, and they cannot be evaded. He must answer them; and, that they may be better answered, let us talk them over.

Massachusetts has answered some of these questions by the establishment of a "Dental Hygiene Council," under whose auspices was held in January last a state conference on "Oral and Dental Hygiene." The declaration as to its object was as follows:

"The purposes of this conference are to bring the importance of this vital subject fully and frankly to parents, educators, social workers and philanthropists; to invite the public to an open discussion on dental hygiene; to determine how best to further the popular movement for better care of the mouth and teeth."

---

*Read before the West Virginia State Dental Society, 1909.

Involved with the Central Hygiene Council in this movement were the "South End House," a settlement of social workers, the "Twentieth Century Club," the "Monday Evening Club," and the dental societies of Massachusetts. And that you may know the prominent people who were brought to contribute their influence and aid in this important and laudable enterprise, I will read the program of the meetings.

I ask you to bear with me. While this program may not seem particularly interesting reading, the significance attached to it and the important people who were present and who gave their aid, makes it interesting in connection with what I have to say in the paper.

In the first place they had at their council a traveling exhibit of dental hygiene, and it was considered the best hygienic exhibit ever assembled. They had models showing the condition of the teeth of the school children; they had drawings and photographs showing the possibility of contagion from drinking cups; and they had an exhibit showing how tuberculosis might spread as a result of uncleanliness in schools, asylums and public places.

I had hoped to have with me (and had the promise of having with me) some models which Dr. Branigan exhibited at the Maine meeting which I attended this spring. There were something like 150 models taken almost at random in Tufts College, showing the condition of the mouth of the average school child, the condition which was spoken of by Dr. Wm. R. Woodbury, of Boston, in his lecture before the Tuberculosis Conference held in Washington. He showed us models. This is a similar one (showing a cut) to some of Dr. Branigan's. Now, what opportunity has that child to masticate its food, or become anything more than an anæmic and broken-down patient?

Then I want to read the names of the important men who lent themselves to this movement in Massachusetts; and of course what could be done in Massachusetts could be done here:

Dean E. H. Smith; Irving Fisher, professor in Political Economy, Yale University; Timothy Leary, professor of Pathology, Medical School, Tufts College; Dr. Samuel A. Hopkins, chairman of Conference Committee; Jeffrey R. Brackett, member Massachusetts State Board of Charity (the best known man in social economics in this country); William H. Allen, secretary Bureau of Municipal Research, New York. These meetings lasted all the week. On Tuesday we had H. Lincoln Chase, chairman Brooklyn Board of Health. These men are all prominent men who came together, not only to talk about the importance of this subject, but to listen to what others had to say. Miss Martha H. Stark, superintendent Instructive District Nursing Association; Seymour H. Stone, general secretary Boston Children's Friend Society; William W. Marvel, D. M. D.; Joseph Lee, Member Boston School Board; William H. Potter, president Dental Hygiene Council of Massachusetts; Horace M. Fletcher, the man who has given us the Fletcher method of chewing milk; Robert A. Woods, South End House, Boston; Samuel A. Hopkins, M. D., D. D. S.; David S. Scannel, member Boston School Board; R. W. Gibson, executive secretary State Y. M. C. A.; Rev. Thomas I. Gasson, president Boston College; Sam H. Durgin, Chairman Boston Board of Health; Walter B. Cannon, professor of Physiology, Harvard Medical School; Alvin Davidson, professor of Biology, Lafayette College, Easton, Pa.; Prof. Wm. T. Sedgewick, Massachusetts Institute of Technology; George S. C. Badger, editor of "School Hygiene;" Mr. George H. Martin, secretary Massachusetts State Board of Education; Charles W. Eliot, president Harvard University, and J. Morgan Howe, M. D.

These distinguished people assembled, as I say, at the behest of the dentists of Massachusetts. It has been claimed that the dentists did not have influence enough to bring together important people; that they could not reach those people; but it has been proven not to be true. Does not this answer the question as to the social and political influence of the dentist, at least in one community? And if in one community, I believe in all.

At the last meeting of the National Dental Association held in Birmingham, Alabama, the Committee on Oral Hygiene planned an open meeting to which the people were invited. The great hall was packed, and the audience listened eagerly to the thrilling addresses of the many speakers. The people are waiting for us to instruct them. This is the day of a great reform, not only in the practice of medicine, but in the establishment of methods for hygienic living and the dissemination of knowledge of the foes that everywhere lie in wait to destroy health and prevent happiness. What is to prevent the Dental Society of West Virginia from holding at its next meeting an open session, to which the public shall be invited to hear a number of popular addresses by members and visitors upon the various phases of oral hygiene? What is to prevent your appointing a committee to go to your legislature and ask for a law for the inspection of the teeth of the school children? Why not involve with you some earnest social workers (men and women) and public-spirited citizens in the establishment in your towns and cities of a public clinic for the deserving poor? This clinic could be conducted in the afternoon and need be no hardship, when one practitioner might give, say, two or three afternoons a month.

What we need is the altruistic spirit. To the practitioner who thinks that any time spent out of his office in this work is a sacrifice too great for him to make, or that free service rendered to the poor will perhaps lessen the fees that unbearable pain compels them to drop into his coffers, let me say that this campaign of education, if properly and ethically conducted, will multiply his legitimate income. Is it only the poor that suffer? Not by any means. Who that conducts a dental practice does not know that neglect of children's teeth is most common in families whose heads could readily afford to pay for protection? The neglect occurs mainly through ignorance. Even meanness, which often exists, could not withstand an enlightened public opinion. Shame and self-reproach are poor companions to the fat pocketbook.

What per cent of the dental work that really needs doing for the protection of our patients, those we see occasionally, is done? Why, not one one-hundredth part. And what per cent of persons who never apply to a dentist, except for relief in extremity, could afford to pay for absolute dental comfort I am afraid to say.

I never knew, in the twenty-eight years of my professional experience, of any public or charitable service rendered by a professional man to impoverish him or redound to his disadvantage.

If dentistry is ever to come into its own in the regard and esteem of the public and her sister professions it will be through the patient and unselfish service to humanity of her followers, and not by the amassing of wealth or securing competency for the individual.

Let us look at the American Medical Association, and see what it is doing for the education of the public and for the elevation of the practice of medicine. This great organization, comprising a membership of 36,000 practitioners of medicine, has come into its position of power and influence by the unselfish effort of its individual members, and, second, by the clever work of its salaried officers and employes. Today it dictates legislation on all medical and sanitary subjects for all branches of our government. It contributes its influence to the passage by our state legislatures of laws regulating the practice of medicine and controlling the laws affecting the health of communities. It employs at a high salary an able lecturer and organizer, who goes from state to state perfecting the organization upon a uniform plan of state and local societies. This organizer lectures to the general public upon sanitary topics, holds meetings and conferences with men of other callings for the better understanding of the relation of the medical man to the public, disseminates knowledge of the frauds and trickery practiced by the charlatan and quack, and exposes the dishonest patent medicines.

This Dr. McCormack, of Bowling Green, Kentucky, came to Baltimore, and I had the pleasure of listening to him in the public lecture hall and in the medical faculty room, and he is a man of wonderful personality and sweet speech. He is a clever man, who would be enjoyed anywhere. He is employed at a large salary to instruct the public and organize the medical profession, and warn the public against the injurious compounds which are sometimes sold by the drug stores. One thing he spoke of which I was particularly impressed with was the duty of every medical man, not only to make himself influential in his community, but to take public office, assume responsibility, go to his legislature, his city council, and take public and prominent part in the affairs of his community. These were Dr. McCormack's words; and if it is of use to the medical man, or the medical profession, it is just as important to the dental man and to the dental profession.

Perhaps we cannot do all this. We have not the 35,000 membership and the enormous revenue which is derived from it. In time of war when a man is drafted, unless he has the money to pay a substitute, he must serve. In this war against unsanitary mouths, against the spread of infections and contagious diseases, against pain and suffering and ill-health, against the enemies of helpless children and pregnant women; in this war in which thousands of victims die almost daily or are carried off the field helpless cripples; in this war against ignorance, filth and disease; in this war for the right of humanity to be clean, sweet and wholesome, you are drafted. Come and serve.

I want to say that in Boston the Hygiene Council gave out, and have at their public baths and in all other public places, a little paper like this, which they have published to be distributed among patients of the dentists. Something like that (exhibiting pamphlet). That is "The Mouth and Teeth," edited by the National Dental Association. I will leave these little slips with you.

I thank you for your patience and kind attention. (Applause.)

DISCUSSION.

Dr. L. J. Walker, Grafton, W. Va.: Not knowing what Dr. Smith was going to say, and not being able to make an extemporaneous address, I had to make some notes, and I find that what I will have to say will not be in the nature of a discussion. It will simply be a corroboration or an agreement of opinion.

In my mind there is only one problem more important confronting our profession at this stage than that of our duty toward the public, viz., the most direct and effective means to prepare the public for the reception of the things we would inculcate; and I am glad that Dr. Smith has pointed out the *modus operandi* by which men in other parts of the country are trying to effect these results. The soil must be prepared, and considerable knowledge must be developed in the minds of the public, to show them why; to point out the dangers from neglect of effort on their part, and the reward of diligence; not only to point out, but to bring about realization.

The medical profession have troubles of their own and are not active in this direction. It is hardly to be expected of them. It is our field more than theirs, and it probably is because they recognize this fact that they leave it to us. I am not sure that they are fully cognizant of the importance of it. Anyway, with the status of the professions today, the duty is very plainly ours, and, as Dr. Smith has pointed out to you, the public is waiting for us to do something. It is "up to us." Moreover, as public benefactors it is our golden opportunity; the greatest opportunity we have to do the greatest good to the greatest number of people with a given amount of effort and time; an opportunity to effect good that will live in the present generation and generations to follow. Using an hour once a week in a dental operation, be it ever so skillful, can benefit but a very few. An hour of effort once a week intelligently employed in teaching prophylaxis to an audience of, say, only ten persons, who could be interested enough to come to hear us or to a number of children in the school room, would multiply the results for good so many times that we should not consider for a moment the cost of its doing.

Dr. Smith has also pointed out to you the movements in other parts of the country, movements towards securing aid from every source. Movements are on foot for securing legislation and funds from state taxes to secure dental service for the poorer classes, and to provide for public instruction. And, as I see it, it is the duty of the dentists of this state to create opportunities and use them to impress the public with the necessity and economy of prevention of diseases of the mouth; primarily for the sake of the individual; and, again, that when the time comes when we, as an organization of dentists, make an appeal to the state for aid to provide for free clinics, the public will feel their needs and add to ours their plea for help, and that they will avail themselves of the opportunities when offered. I believe it the duty of the West Virginia Dental Society to take steps at once to bring about concerted effort, by any and every means its members can devise, for this end. The task is no small one. It cannot be accomplished in a year, or several years, but the time is here for the first steps.

That the public could be interested was impressed on me recently in the following manner: One of the dental profession of Grafton was asked to read a paper before the Anti-Tuberculosis Exhibit, which exhibited there last July. The subject was "The Hygiene of the Mouth," in which it was endeavored to show that the mouth and teeth should be kept in a healthy condition. The essentials of a bacterial laboratory were enumerated. The similarity of conditions in the mouth were described. An extract of the examination of the mouths of children in public schools was given. The importance of the care of children's teeth was emphasized. Hygienic methods were named, mentioning exercise by vigorous mastication as the most important. This paper elicited more inquiries from the public regarding the individual effort towards prevention, and the necessity of caring for the teeth of the children, than I was required to answer in ten years of previous practice. This was particularly impressive to me, because this one paper was read before no more people than probably 150; and from that time on I noticed the many inquiries from patients coming to my office who had never made any inquiries of that nature before.

And I would repeat again that this is our golden opportunity as public benefactors. It is also the opportunity, above all others that are within our grasp, to place our profession, the profession we love so much, higher in the scale that registers professionalism, and snatch it from the hands of those who prostitute it by advertised evidence of absolute commercialism, making it appear that quality of materials used in artificial substitutes is the sole qualification, and how to secure patients and their money the highest ambition of those in our ranks; and the amount of attention they attract, measured by the number of people they influence, is at least in the ratio of five to one. Is it any wonder that in the eyes of the great majority those of us who merit some esteem and respect by our honest effort are classed with our fellows who make the most noise and attract money to themselves? Dr. Smith also brought out, that it is not only our duty to the public to teach them prophylactics, but to teach them to protect themselves from quacks and from malpractice. The injury done to the public from this source, as you all know, is not a small one.

It is only by a system of education, the motives of which permit no question of their altruistic character, that are plainly above pecuniary benefits, that we can offset the shame brought upon the profession by the men who are to the profession as prostitutes to the body social.

Dr. D. C. Clark, Blacksville, W. Va.: Not knowing what Dr. Smith would say in his discussion today, it was impossible for me to write any discussion on it. One thing I did know (and I have had enough experience to know), that Dr. Smith would say something good to us, something worth remembering and taking home and using in our everyday practice, because I have heard him lecture time and time again. Although I have taken a few quizzes under him—a few examinations—I never felt quite as the man out west did; never felt like killing him.

But I will say that I heartily concur with almost everything he has said, because, gentlemen, the physicians are forging ahead, the lawyers, and men of all other professions; and why not the dentists? It is not our sole object (or it should not be) to rake in the dollars. That is the very smallest part of it. To do good to humanity; and people, as others have said, are waiting to be educated; are anxious to be educated. Our patrons who live in the community where we live are anxious to be educated in this line; they want to know about hygienic matters, and they are willing to be educated, and you can look back a very few years and see the advancement of communities.

I guess, further than this, I won't have anything to say, except we are very glad, I know all of us are, to have Dr. Smith with us, because he is always a pleasant speaker and always tells something good.

Dr. Geo. H. Wilson, Cleveland, O.: I do not know how much time you want to give me, but I feel I would like to have an hour on this subject. I would like to spend about five minutes for myself and then turn over the other fifty-five minutes to Dr. Smith. I know we all enjoy hearing Dr. Smith, no matter whether he is talking on this subject or some other. We hope to hear a good deal more from him.

This subject is certainly a broad one, almost as broad as the dental profession. I do not think any subject is interesting the profession as much today as the question of the prevention of dental disease and the care of the mouth, and I think we are going to become more and more interested. I am glad the subject was brought up at this time. I know of no one who can enthuse us more than Dr. Smith. If the dental profession is to rank high in the world it will be because of the altruistic work that it does. There is where our medical brethren have made their greatest reputation. It is because of the work they have done for the world, without compensation, in preventing diseases of various kinds. It is true, when they are working along these lines they are working in a way that will eventually bring money, as a natural consequence, but it is not done solely for such a purpose. So with the dental profession its altruistic work should not be done with the idea that it will pay, but, necessarily it will pay financially in the long run. We are told that if all the dental work that is needed to be done should demand attention, there would not be one-tenth enough dentists to do the work, and I believe it is true that ten times the number of men could not do the work that is needed at the present time. So that, no matter if we succeed in preventing a large amount, there are not enough dentists at the present time to accomplish the needed work. I do not feel that it is going to reduce our income at all, but it will have a tendency to increase it.

In Cleveland we are agitating this subject quite freely. We have the chairman of the national association committee on Oral Hygiene, he is one of those fellows who is not afraid of anything. Dr. Ebersole is working, and he is going to work. He has been before the school council, and has obtained permission for the dentists to go into all the schools and examine the mouths of the school children. There are over 50,000 children to be examined. Then we are to have the privilege of establishing four clinics in the schools, to be carried on by the dentists for one year. This privilege was granted because it was agitated upon altruistic ideas; not what it was going to do for the dental profession, but what the dental profession could do for the public. At the same time, the medical profession went before the school council and endeavored to have established a medical board for the schools. The first officer was to have a salary of $3,000. Then there was to be assistant physicians and nurses, so that fifteen or twenty thousand dollars was to be paid out by the school council for work that the medical profession proposed to do. The council recognized that the work should be done, but they did not feel justified in appropriating the money.

When the dental profession offered to do something from an altruistic point of view they got everything they asked for. This shows how we must work. It is possible that some of the older men may not feel that they can take hold of this work, but they must so that the public will not think the young men are trying to build up a practice for themselves. We may use the old men for counsel and the young men for action. It may be necessary for some of the younger men to take hold of this work and push it. Let me say to you, be careful; don't try to do it all yourself. You be the power behind the throne. Don't feel that you have to make yourself important, for credit will in due time be rendered if you are modest, but forceful. The idea is that you are young, and if you do not act wisely you will be criticized by the older men, and also by the medical profession. The school council will say you have an unworthy motive and will turn you down, but if you work carefully, and show a worthy interest, you may carry on the work yourself. I have known young men who have failed by letting it appear that they were the only ones, instead of calling in the forces that they should. A young man should proceed as a general does, by organizing his forces properly. I simply offer this as a word of caution, and a way in which the young men can work. If we work for the good of others we will get the honor when the time comes. Young men have a long life to live, and should work accordingly; that is for the future.

I am very glad Dr. Smith could be here and present this subject as he has. I praise the dentists of West Virginia for the work they are doing. I believe this society will not go down as the former societies did. There are comparatively few dentists in West Virginia, but you have shown a spirit of great interest in everything progressive, and that, I think, will mean the life, energy and durability of this society.

Dr. John H. McClure, Wheeling, W. Va.: I haven't very much to say; I haven't enough to say to go up in front.

I am certainly very glad to have heard Dr. Smith, and I agree with everything he said. I believe I agree with pretty nearly everything everyone has said; for once I agree even with Dr. Burdats. He said it is all right to be altruistic; it is all right to be charitable; but he advises that the dentist improve himself, read, and gain knowledge that he can disseminate to his patients. At the same time, even though a man should be charitable and should scatter good seed, there is such a thing as "casting pearls before swine." There is a place in the Bible where it says, "he that provideth not for his own, and especially for those of his own house, hath denied the faith and is worse than an infidel." Yes, the Bible says that; that's all right. The fact of the matter is that the dentist has to make a living, and I believe that the right way for him to make it, is to attend to his business; go to the meetings and learn what he can, I think the general public will think a good deal more of him, and if he loses any business by being away from his office it will all come back to him in the long run. I don't believe I have anything more to say, except that I hope everybody else will get up, as I have done, and talk, even if they do not say anything.

Dr. Chas. H. Bartlett, Parkersburg, W. Va.: I am a good deal like Dr. McClure and Dr. Wright, I haven't very much to say. If I had, could not say it as well as Dr. McClure and Dr Wright. You all know how well they can talk when they get started.

I heartily endorse what Dr. Smith has said, and also Dr. Wilson. We have all enjoyed it, I am sure. There is one thing I would like to say. Like Dr. McClure, I think we all have some compensation for this work. There is one thing we can do: instruct our patients, when we are doing work for them. And then this thing of doing work gratuitously in the schools—I think it pays. It pays you to educate the children to take care of their teeth, and as they grow up they will patronize the dentists.

This work has got to be done by the young men. They are coming on, and we, the older members, are pretty nearly ready to pass over the divide and down the western slope; they must come to the front. The success of dentistry in the whole country is resting with the young men. They are coming on and they must take the command of things.

This year we organized a little society in Parkersburg. It didn't amount to very much, but since Dr. Smith has been talking to us I have been thinking that when I go home I would try and resuscitate it. The subject came up at one of our meetings on the examination of the children in school, and they all seemed to fall into the plan very readily. I think when I go home I will try and reorganize this society. Some of them are quite willing to examine the children's teeth; but I do not know how to organize it. I wish Dr. Smith would give us some instruction how to do it. The dentist is building up his own profession when he goes into that sort of work. The present generation may not receive all the benefits, but it will go on until the people are wholly educated in what they ought to do, to take care of their children's teeth.

I often have these questions asked: "What shall I do with my little girl? Shall I have her teeth filled?" I had a case last week. A gentleman came in with his little daughter five years old suffering with an aching tooth. He said, "I want this tooth extracted." I said, "No, you don't want that tooth extracted." So I put something in to relieve the aching temporarily, but I told him I wouldn't take it out; "She must not have it taken out by any means." But the next day he came back and I didn't happen to be in, and he said, "I want this tooth pulled." Well, my office girl said, "If he told you he thought it ought not to be taken out he won't pull it for you." I presume he went to someone else and had it out. Temporary teeth are very important to the second set. If we take out these teeth, as Dr. Flint showed us last night, we are endangering the second set, and they all ought to be carefully taken care of, and the dentists have a great deal to do in educating the people to that point. I know we do not fully realize the importance of this; and that is the way to wake up the profession. The matter is now up to the young men, and they have got to take hold of it and build it up. Be prompt and regular in your attendance at the dental societies. There is nothing that is going to do so much for a young man as the instruction the association will give.

There is generally a good deal of jealousy between the dentists about getting each other's patients, but if we meet here and get better acquainted with each other that disappears. We find that our brothers are just the same as we are, and we do not want to hurt each other. The main thing is, gentlemen, to observe the golden rule. That is the best code of ethics that we can have. The best in the whole world.

I cannot criticize Dr. Smith's paper because it is all right, and we are all very glad to have heard it, and have him with us. It is an inspiration.

Dr. F. L. Wright, Wheeling, W. Va.: Dr. Bartlett has brought up one point on which I would like to ask a question of every dentist here. Is it not one of the *first* duties of the dentist to his patients and to the public to become a member of and take part in the society? We have some good men who ought to be in this society. I wish Dr. Smith, or somebody, would tell us how to get them in. We need them and they need us.

I think every one of us can take another point. How many of you instruct your patients, and especially the little patients, in the way to properly cleanse the teeth and massage the gums? Show them how to do it, and you will be surprised at the results. In that small way you can do a lot of good that will tell in time. And I would especially urge that subject on the dentists, of attending the dental society meetings. It is a duty you owe to the public.

Dr. Chas. H. Bartlett, Parkersburg, W. Va.: That reminds me of something that happened to one of my patients. I have always tried to instruct the parents that the children should take care of their teeth. I have got a lot of little brushes and I give them a little powder to brush their teeth with. A lady came in the other day and said, ''My little boy came down to breakfast the other day, and I said, 'Watson, did you wash your face this morning?' 'O no,' he said, 'I forgot to wash my face, but I brushed my teeth.' '' Some people are just as particular as they can be, but you want to instruct the parents about the children's teeth. One lady came in and said, ''I wish you would impress upon my boy the importance of brushing his teeth!'' The parents should let them feel that they have a responsibility in taking care of their teeth.

Dr. F. L. Wright, Wheeling, W. Va.: Do you demonstrate to them how to use a tooth brush?

Dr. C. H. Bartlett, Parkersburg, W. Va.: Yes—try to.

Dr. F. L. Wright, Wheeling, W. Va.: Just take 15 minutes and show them how to do it; and you will be surprised at the results.

Dr. W. J. Boydston, Fairmont, W. Va.: I do not know just exactly what to say on this subject; but just a short time ago there was a lady came into my office and she had a little girl with her. She said, ''Doctor, I would like to have you examine this little girl's teeth and tell me what is the matter.'' I looked at her teeth and found there were a number of badly decayed teeth, and told her so. She said, ''This little girl belongs to the Humane Society, and we haven't the money to have her teeth fixed up. What are we to do?'' Well, what could I say, but to come in and have them fixed up? I did the best I could by that little girl by filling the molars that had cavities in them. I didn't get anything out of it, but I thought if I could do that much good for that little girl it might help some.

If we take these children of the Humane Society that they are trying to help and find homes for, and treat those little teeth, it certainly will not do us any harm; and I do think that Dr. Smith's paper has certainly stirred a feeling among the dentists of West Virginia. I would like to see a society formed for visiting the schools and having the children come to us. I would be willing to give part of my time. I haven't much money and I need it bad, but I would be willing to take a few hours each week to look at the children's teeth, and I hope we, as dentists, will make an effort in that direction.

Dr. L. Geo. Beerbower, Terra Alta, W. Va.: I like to come out to these meetings, for they are always a source of inspiration. I was over to Pittsburg a few weeks ago when the Pennsylvania State society held its meeting there, and I am sure that every one who had the privilege of being there was greatly benefited. I am especially anxious to attend every meeting of our own society, I get a good deal of benefit from it, and then I feel that every ethical dentist in the state should at least lend presence in these meetings, for this will create greater interest. I have to plod along by myself in the town where I am, and many times I would like to ask a question of someone; but I cannot do it unless by correspondence, and it is pretty hard to get definite information from that, at least it is never as beneficial as seeing a clinic by one who specializes along some particular line of work.

In reference to the paper, I am sure we have all been greatly benefited by it. We should try to put some of these splendid thoughts into every day use. One thought came to me some time ago along these lines, and I am going to carry it out. I was talking to the county superintendent of free schools of our county, and I said, ''Professor, at the next County Institute I would like to read a little paper along the line of the care of the teeth, and probably connect with it the prevention of tuberculosis and the benefit to health.'' He said, ''Well, I never thought of that before, but we would be very glad to have you read such a paper.'' There is one small channel through which we might carry the care of the teeth to the public, through the teachers of our counties, who go out into the districts where there are no dentists; where they go to the physician and say, "I want that tooth pulled." And so you see that will give us an opportunity to carry some thought with reference to the care of the teeth as a preventive for the attendant diseases. Each one of us has some small channel through which we can do some good work along this line. We ought all to watch for each little opportunity; not try to do the great big thing of reading a splendid paper like Dr. Smith has just given us, but there is always some way by which we can do a little missionary work along this line.

Dr. John H. McClure, Wheeling, W. Va.: There is another point. There is a lot of charitable institutions for children about the country. I happen to have a little connection with one of those myself. And every place where there is a children's home and charitable institutions those people deserve work too, and those children should be looked after the same as the public school children, and there are a great many I have gotten at through the heads of those institutions better than through the political red tape of a school board. If you live in a place where there is some charitable institution, if you say you would be glad to take care of them you will get the work, all right.

Dr. C. H. Bartlett, Parkersburg, W. Va.: We have a children's home in Parkersburg, I saw the president of the home and told her I would be willing to come and examine the children's teeth, and she said, "We will be very glad to have you come."

Our first state society, as Dr. Smith knows, just died for the want of vitality; there was nothing there alive. And these people here in Wheeling started a little Local Ohio Valley society, it went along very well, they were friendly and social. They found when they got together that they were not all so terribly bad, as you know. They got together and soon found they were benefited by association. And this state society of West Virginia has grown out of that organization. They have done a great deal of good. The young men think and say, "I cannot leave my practice; I must attend to the patient coming in who is going away," and this patient and that one are anxious to have their work done. But he doesn't lose a dollar; his patients are glad to have him come, and generally glad to wait until he gets back. They have a better opinion of him because he is trying to keep up-to-date in the profession and keep to the front. But the trouble is to get the young men to come. I have a friend in the southern part of the state to whom I have written, I have seen him and he has repeatedly promised to come, but he is always so busy and sorry he couldn't be with us. Dr. Williams who is here said he had written to him once or twice and 'phoned to him, but he hasn't come. That is the trouble; we cannot get them here, and I do not know what we are going to do. Can you tell some way we can force them in? (Addressing Dr. Smith). We have got a good society and it is well started with young blood, wide awake, up-to-date young men.

Dr. B. Holly Smith, Baltimore, Md.: The able manner in which this paper has been discussed makes me think it would have been just as well to have not read the paper at all, but to have had just the discussion alone.

I certainly see no reason for discouragement about your meeting. You have a very good meeting—a splendid turnout, in spite of the physical difficulties that you have spoken of, which doubtless have kept quite a number away.

The proceedings of your society ought to be interesting reading. I hope that you will accept the suggestion I made in regard to a public meeting. To have an open session with a lecture on oral hygiene would advertise your society in every community it visits. If you desired them it would be an easy matter to get men from other states who have done successful work in this line to tell what they have accomplished. Such an open meeting would bring out the children's societies, asylums, etc., and interest them in you and your work. You tell me about the "almighty dollar.'' It is bound to come to those who do their public duty. It is your duty; just as much a part of your life and profession as anything you do for pay.

Every man owes some disinterested service to his city or state, and to this rule the dentist is no exception. The diseased conditions to be found in the mouths of thousands of the children in your asylums, orphanages and public schools, etc., offer the opportunity to the dental profession for this public service. It is your duty, your bounden duty, to spend some time with those poor, unfortunate children, making their mouths hygienic and fit for their part of the work of digestion.

Teaching children how to take care of their teeth is also highly essential. You are not fit to have a dental practice if you don't do that, at least. The teaching of parents, however, as to the responsibility they have to the child is another thing and equally important.

I feel that I have take up more of your time than is necessary, but I do hope you will think about the subject and that something will come of it. I believe it will strengthen your society, to put forth an organized unselfish effort for the benefit of the people of West Virginia.

REPORT OF COMMITTEE ON PYORRHEA ALVEOLARIS*

By E. M. Ramelli, D. D. S., Chairman Com., New Orleans, La.

WE, the undersigned Committee on Pyorrhea Alveolaris Research, beg to submit the following as our labors of the past year, and ask the Society to reappoint the committee for further research.

The committee also asks the Society to be instructed to have its report printed in pamphlet form to facilitate in mailing to our correspondents.

The following is the report:

LETTER SENT OUT BY THE COMMITTEE TO SOCIETIES AND INDIVIDUALS.

New Orleans, La., May 24, 1908.

Gentlemen:

Our object in writing your society is to enlist your co-operative efforts in having the president of your society appoint a committee, as our society has done, for the purpose of investigating Pyorrhea Alveolaris, its causes, symptoms (in its earliest stages), origin, treatment, cure, and its prevention. We are to report at our next annual meeting.

This disease is the knottiest problem that confronts our profession, and our mission is, therefore, to write to all dental societies with a view of getting their co-operation by appointing committees to help in this investigation, so as to concrete the opinions of the profession at large on this disease.

The list of questions which you also receive with this letter is to be answered by your committee and to be forwarded to the chairman of this committee. We hope, in this way, to arrive at a settlement of some of the questions, and we may in the future be able to obtain aid from the government to ferret out the cause, treatment, cure and prevention of this disease.

---

*Read before the Louisiana State Dental Society, 1909.

Yours fraternally,

E. H. RAMELLI, *Chairman.*

620 Canal Street, New Orleans, La.

Committee—Drs. Jules J. Sarrazin, H. E. Belden, E. H. Ramelli.

QUESTIONS SENT WITH LETTER

1. Do you consider Pyorrhea Alveolaris incurable?
2. Do you know of any cases that have been cured?
3. In what stages were the cases when first under observation?
4. Have you ever recognized the disease before Serumal Calculus appeared?
5. What were the symptoms?
6. Do you think Salivary Calculus has any effect on the disease?
7. Were the patients under your observation of robust or delicate physique?
8. Have you ever seen the disease in youth, and at what age?
9. Do you know of any properly-treated devitalized teeth being lost by the disease?
10. Did the devitalization and root-canal sterilization and filling precede or follow Pyorrhea development?
11. At what time of life do you find treatment most efficacious?
12. Do you find Pyorrhea more in males or females?
13. Do you find it more in the upper or lower jaw?
14. Does the disease attack all teeth alike?
15. Were patients ever afflicted with syphilis, tuberculosis, uricaemia, chronic indigestion or chronic constipation?
16. Have you ever seen cases where malocclusion was a cause?
17. Do you think autointoxication a cause?
18. Do you think uricaemia a cause?
19. Is it a disease of the gum?
20. Is it a disease of the alveolar process?
21. Is it a disease of the peridental membrane?

(It is of the utmost importance, in order to insure the success of this vital investigation, that your society should take this matter up at once and favor us with an early answer, giving the disposition decided upon at your meeting and action taken.)

QUESTION ONE AND ANSWERS

No. 1—Do you consider Pyorrhea Alveolaris incurable?

Answers: No. 1—Says: If by this is meant the restoration of the parts to their original condition and the non-recurrence of the disease, Yes. If is meant the stopping of the flow of pus and checking the active progress of the disease, No.

No 2—Says: No. Pyorrhea is only one stage of the disease Alveolitis.

No. 3—Says: No.

No. 4—Says: Differ.

No. 5—Says: No.

No. 6—Says: No.

No. 7—Says: No.

No. 8—Says: I have known pockets around teeth to heal up absolutely, so that the gum readhered to the tooth and assumed a perfectly healthy appearance, and the tooth that had been painful and loose became perfectly serviceable for chewing. The gum, however, that was lost was never replaced, and I cannot say that the tooth might not relapse into its former condition.

No. 9—Says: No.

No. 10—Says: No.

No. 11—Says: No.

No. 12—Says: No; certainly not; provided, there is at least two-thirds of the root still invested with peridental membrane, there is every chance of perfect recovery.

No. 14—Says: Never. The question is not, Can it be cured? as a cure can always be accomplished by the extraction of the affected tooth; but the question is: Has the disease progressed so far in the case of each individual tooth that a cure with the retention of the tooth is impossible?

QUESTION TWO AND ANSWERS

No. 2—Do you know of any cases that have been cured?

Answers: No. 1—Says: If is meant the stopping of the flow of pus and checking the active progress of the disease, Yes.

No. 2—Says: Yes.

No. 3—Says: Yes.

No. 4—Says: Differ.

No. 5—Says: Yes.

No. 6—Says: Yes.

No. 7—Says: Hundreds.

No. 8—Says: I would say that I have in my own practice a great many cases where such teeth have remained normal for years. I also have in my practice a great many cases where teeth that have become normal only stay normal through constant watching and treatment.

No. 9—Says: Yes.

No. 10—Says: Yes.

No. 11—Says: Yes.

No. 12—Says: Many cases have been cured, but it must be borne in mind that, whilst there is always the predisposing causes present, and almost invariably, relatives of the patient still suffering from the disease, a fresh infection is readily caught in the act of osculation. I have succeeded in arresting the disease after a patient had suffered sixteen years.

No. 14—Says: Yes; hundreds.

QUESTION THREE AND ANSWERS

No. 3—In what stages were the cases when first under observation?

Answers: No. 1—Says: Different stages—slight, advanced, more advanced.

No. 2—Says: In all stages short of complete loss of bony support.

No. 3—Says: All stages.

No. 4—No answer.

No. 5—Says: Do not believe Pyorrhea Alveolaris should be divided into stages, but have seen cures in all but the most advanced cases.

No. 6—Says: Some in the most severe form.

No. 7—Says: All stages.

No. 8—No answer.

No. 9—Says: In nearly all stages, from a mild acute to an extensive chronic condition.

No. 10—Says: A few in premonitory stages; most in advanced stages.

No. 11—Says: Incipient.

No. 12—Says: Early and late stages; naturally, the latter respond more slowly to treatment.

No. 14—Says: All stages.

QUESTION FOUR AND ANSWERS

No. 4—Have you ever recognized the disease before Serumal Calculus appeared?

Answers: No. 1—Says: Yes.

No. 2—Says:Yes; see answer to Question 6.

No. 3—Says: Rarely.

No. 4—No answer.

No. 5—Says: Yes.

No. 6—Says: No.

No. 7—Says: Yes.

No. 8—Says: I have most unquestionably recognized the disease before Serumal Calculus appeared; at least, I could not find any on the root of the tooth.

No. 9—Says: Yes.

No. 10—Says: Rarely, but sometimes.

No. 11—Says: No.

No. 12—Says: Frequently, especially when the disease will run a more acute form. Gingiva is swollen, coriaceous and purple-blue in color; rolled edges at the cervical margin of the tooth, instead of a feather-like edge; and, on inserting a small ivory or wooden spatula, it will be noticed that the attachment has ceased for some distance into the socket. Such an insertion will not cause bleeding, but will give a characteristic odor of phosphoretted hydrogen, similar to that foetor associated with necrosis of bone.

No. 14—Says: Yes. Unfortunately the name, Pyorrhea Alveolaris, implies only the final stage of the disease, in which there is suppuration.

There are a number of stages in what may be called the general condition, beginning with slight gingival inflammation, and progressing with more or less rapidity to the final suppurative stage. The treatment of what may be called the incipient stage invariably prevents progress, and affects a cure of the disease. The formation of Serumal Calculus I believe to be secondary to the primary inflammation, and this in turn is followed by suppuration. All these stages are so inseparably connected, that I consider preventive treatment to be just as properly the treatment of Pyorrhea as the curative treatment of the more advanced condition. For that reason, I say that I have recognized the disease before Serumal Calculus appeared.

No. 5—What were the symptoms?

Answers: No. 1—Says: Inflammation and swelling of the gums, destruction of the peridental membrane; alveolus often affected, more or less.

No. 2—Says: Alveolitis in its progress includes all the processes known to other surgical diseases of bones--viz., acute, chronic, suppurative and necrotic stages. In my opinion, the initial, exciting cause, in at least nine-tenths of the cases, is the formation of calcareous deposits about the necks of the teeth.

No. 3—Says: Local, accompanied by violent pericementitis and inflammation of the gingival border.

No. 4—No answer.

No. 5—Says: Same as usual, except lack of deposits.

No. 6—No answer.

No. 7—Says: Sharp inflammation of the overlying soft tissues.

No. 8—No answer.

No. 9—Says: Flow of pus from around the necks of the teeth or deep pockets along the roots of the teeth.

No. 10—Says: Gums loosened at neck, pus pockets.

No. 11—No answer.

No. 12—Says: The objective symptoms, as just described under No. 4. The subjective—similar to a general gingivitis, associated with a general periodontitis; a feeling of uneasiness on mastication through a thickening of the periodontum, with only slight stretching of the nervous supply and vessels of the pulp.

No. 14—Says: Usually gingival inflammation.

QUESTION SIX AND ANSWERS

No 6—Do you think Salivary Calculus has any effect on the disease?

Answers: No. 1—Says: Yes, though not so much as Serumal Calculus.

No. 2—Says: Yes. It would seem that Salivary Calculus is, in most cases, the cause of the primary lesion of the soft tissues by impinging against the gums. This primary lesion, from whatever cause, is the point of least resistance, where bacterial infection may, and very frequently does, take place. Serumal Calculus on the roots can only take place after the peridental membrane and bone covering that part of the root have been destroyed; then comes the calculus on the root, followed by greater inflamed zones, more pus and necrosed bone. In my opinion, it is almost wholly brought about by calcareous deposits, which can be kept off by the patient.

The tartar being adherent, Nature cannot remove it, and the inflammation becomes more extended and violent, resulting in raw tissue and open bloodvessels at the point of contact with the tartar. This naturally results in the formation of pus, in small quantities at first. The surrounding of a foreign body by pus, or the floating of a foreign body in pus, until the surface is reached and an opening made for its discharge, is a familiar process in the case of a thorn or splinter in the flesh.

Tartar against the gum margin is a foreign body, and Nature endeavors to dispose of it just as she would the splinter. The tartar, being fixed, only continues the irritation, with pus as a continual result. The thin edges of the alveolar process, being continually attacked by pus or osteoclasts, soon begin to melt away, and the membranes covering the bone and roots of the teeth disappear with it. So long as the irritation remains, this process continues, its rapidity varying with environment and individuals. Thus it is seen that Nature in this particular malady, if unassisted in her attack on her enemy, the calcareous deposits, destroys the tissue about the teeth until the tooth with its attached tartar is extruded, thus finally accomplishing what she started to do.

The most frequent point of attack for alveolitis is in the septums between the teeth, where tartar is not disturbed by lips, tongue, food or brush; but any place about the necks of the teeth, where tartar is undisturbed, is apt to be the point of attack. The opportunity for the entrance of infection to the alveolar process is almost unlimited, for calcareous deposits about the necks of the teeth are found in every adult human mouth, and in the mouths of most children.

No. 3—Says: No.

No. 4—Says: Differ.

No. 5—Says: No, except to irritate the tissues.

No. 6—Says: No.

No. 7—Says: Is one of the clearest causes.

No. 8—Says: I do not think that Salivary Calculus, by infecting the necks of the teeth, may cause such an infection. That germs penetrate the weakened lymphatics of the peridental membrane, and cause a peridental abscess below the surface of the gums, which abscess, by working along the root to the neck of the tooth, rips the gum away, and so causes a pyorrhea pocket.

No. 9—Says: Yes.

No. 10—Says: Yes; most detrimental.

No. 11—Says: Tends to necrose.

No. 12—Says: Yes, in two ways: First, it may cause the primary lesion by producing an ulcerated surface of the gingiva, and, should the infection come along, the mischief is done. Secondly, the disease (Riggs') is a powerful cause. The toxines acting upon the adjacent secreting glands, will stimulate, then is produced an unhealthy secretion, containing the necessary material for building up Salivary Calculus, and, finally, in the more chronic forms of Pyorrhea Alveolaris, the whole root of the tooth may become incrusted with either a "spiky nodular or granular" form of calculus, which necessarily has its source in the socket of the tooth itself.

No. 14—Says: Very little, if any.

QUESTION SEVEN AND ANSWERS

No. 7—Were the patients under your observation of robust or delicate physique?

Answers: No. 1—Says: Both.

No. 2—Says: Both.

No. 3—Says: Both.

No. 4—Says: Differ.

No. 5—Says: Both.

No. 6—Says: Apparently of robust physique.

No. 7—Says: Both.

No. 8—No answer.

No. 9—Says: Both.

No. 10—Says: Mostly of robust physique.

No. 11—Says: Both.

No. 12—Says: Generally the more robust. Where large teeth are present, and well covered with enamel, my observation tends to convince me that the better-formed teeth are those which are affected with the disease. The robust patient may become delicate in time on account of the toxæmia produced in the progress of the infection, leading to anæmia, pernicious or otherwise lymphadentitis, lymphangitis, general disturbance of the digestive tract, etc., etc.

No. 14—Says: Both.

QUESTION EIGHT AND ANSWERS

No. 8—Have you ever seen the disease in youth, and at what age?

Answers: No. 1—Says: Seldom below twenty, in my experience, though some notice it as early as sixteen.

No. 2—Says: Yes, from ten years on.

No. 3—Says: Yes, before twenty years of age.

No. 4—Says: Differ.

No. 5—Says: Yes, two young men at sixteen.

No. 6—Says: Usually in married people of over thirty-five years of age.

No. 7—Says: As early as the fifteenth year.

No. 8—No answer.

No. 9—Says: The youngest patient that came to my notice was about twenty years old.

No. 10—Says: In a very few cases about twenty-five years of age.

No. 11—Says: Yes, at twelve years.

No. 12—Says: Have not seen it in the "teens," but soon after—*i. e.*, in the "twenties." Never saw it present where the enamel of the teeth was defective due to stomatitis during development.

No. 14—Says: Yes, as early as twelve years of age.

QUESTION NINE AND ANSWERS

No. 9—Do you know of any properly treated devitalized teeth being lost by the disease?

Answers: No. 1—Says: Yes; though in some instances I know of no other operation followed by such marked improvement.

No. 2—Says: Yes.

No. 3—Says: Yes.

No. 4—Says: Differ.

No. 5—Says: No.

No. 6—Says: No.

No. 7—Says: Yes.

No. 8—Says: I do know a great many properly treated devitalized teeth that have been lost by the disease.

No. 9—Says: Yes.

No. 10—Says: Yes.

No. 11—Says: Yes.

No. 12—Says: The necessity for devitalization of a tooth is so seldom where Pyorrhea Alveolaris is present, experience convinces me that caries and the presence of the disease are altogether antagonistic.

No. 14—Says: I do not recollect any such case, as I pay little attention as to whether the teeth are vital or not, except where septic pulps exist. Properly treated devitalized teeth are no more or less subject to Pyorrhea than those containing vital pulps.

QUESTION TEN AND ANSWERS

No. 10—Did the devitalization and root-canal sterilization and filling precede or follow Pyorrhea development?

Answers: No. 1—Says: Both.

No. 2—Says: Both.

No. 3—Says: Preceded it.

No. 4—No answer.

No. 5—Says: Follow.

No. 6—No answer.

No. 7—Says: Have seen teeth lost before as well as after.

No. 8—Says: I have known teeth to be lost where devitalization and sterilization and filling of the root-canal both preceded and followed the advent of Pyorrhea development.

No. 9—Says: I do not think the devitalization of the pulp, and its subsequent removal and filling of the root canals, play a very important part in the cause or the treatment of Pyorrhea.

No. 10—Says: Always followed.

No. 11—Says: Followed treatment for Pyorrhea.

No. 12—Says: I do not think it has anything at all to do with the case. Since a true Pyorrhea is an infective ulceration commencing at the gum margin, and is of a progressive character towards the apical foramen, it is distinguishable from other inflammations extending in an opposite direction

No. 14—Says: I never devitalize in connection with the Pyorrhea treatment, unless a well-defined pathological condition of the pulp is evident.

QUESTION ELEVEN AND ANSWERS

No. 11—At what time of life do you find treatment most efficacious?

Answers: No. 1—Says: As a rule during the prime and vigor of life, when the general powers of resistance are greatest.

No. 2—Says: No particular age. A patient of good vigor recovers from any disease or injury more readily than one that is not. Senility, which may occur in early years as well as in old age, is unfavorable to recovery.

No. 3—Says: Prior to forty years of age.

No. 4—No answer.

No. 5—Says: Early.

No. 6—Says: Below thirty and over fifty-five.

No. 7—Says: Any time prior to the loss of less than half the socket.

No. 8—Says: I do not find that any time of life is especially favorable for the treatment of Pyorrhea, except so long as the patient is in good health.

No. 9—Says: Before the age of forty.

No. 10—Says: In early middle age.

No. 11—No answer.

No. 12—Says: As soon as ever the lesion is diagnosed by smell, microscopic appearances, character of the pus, presence of bacilli (no cocci) not acid-fast, like the tubercle bacilli.

No. 14—Says: I believe time of life has nothing to do with the efficacy of treatment, having obtained satisfactory results with patients ranging in age from twelve to ninety years.

QUESTION TWELVE AND ANSWERS

No. 12—Do you find Pyorrhea more in males or in females?

Answers: No. 1—Says: Rather more in females.

No. 2—Says: No predisposition as to sex has been observed.

No. 3—Says: In males.

No. 4—No answer.

No. 5—Says: More females present for treatment, but probably as many males affected.

No. 6—Says: Undoubtedly in males.

No. 7—Says: About equal.

No. 8—Says: I do not think that the question of sex has anything to do with the frequency with which Pyorrhea occurs, except that, perhaps, the depression of childbirth, and the weakness sometimes caused by it, may be a systemic cause that tends in this direction.

No. 9—Says: Males.

No. 10—Says: Females.

No. 11—Says: No observation along this line.

No. 12—Says: I cannot state which sex predominates, but think that the tobacco habit masks the condition in the case of the male and it is less frequently recognized by the patient himself in consequence. The disease, in my opinion, is too frequently overlooked by the general medical practitioner, and its presence, if diagnosed, would go a considerably long way in accounting for many of its sequels, which receive special treatment at their hands, instead of going to the root of the matter, which they have probably failed to diagnose.

No. 14—Says: No appreciable difference.

QUESTION THIRTEEN AND ANSWERS

No. 13—Do you find it more in the upper or lower jaw?

Answers: No. 1—Says: Rather more in the lower.

No. 2—Says: No predisposition to either.

No. 3—Says: Possibly the lower.

No. 4—No answer.

No. 5—Says: Cannot say.

No. 6—Says: Equally so or better—upper about 15 per cent. to lower 85 per cent.

No. 7—Says: About equal.

No. 8—Says: I do not find it attacks one jaw more than the other.

No. 9—Says: Lower.

No. 10—Says: Upper jaw.

No. 11—Says: About the same in both jaws.

No. 12—Says: "Honors are easy," in my opinion, where an acute attack has been present. Generally, the upper front teeth appear to be attacked first, especially where the infection has been communicated per exchanged lead pencils by shop assistants, suffering from the disease, to another unaffected, when both of whom are in the habit of "pencil-licking."

No. 14—Says: No appreciable difference.

(*To be continued*)

There is only one cure for public distress, and that is public education, directed to make men thoughtful, merciful and just.—*Ruskin.*

THE SURGICAL TREATMENT OF CERTAIN DEFORMITIES OF THE JAW ASSOCIATED WITH MALOCCLUSION OF THE TEETH.*

By W. Wayne Babcock, M. D., Philadelphia, Pa.

Professor of Surgery in the Temple University and of Oral Surgery in the Philadelphia Dental College.

WITH the development in orthodontic practice it is surprising that so little advance has been made in the surgical treatment of prognathism, receding maxilla and other marked deformities of the jaw, producing malocclusion. In the main the text-books on oral surgery contain no reference to the subject and little is to be found in modern treatises of surgery. In Von Bergmann's elaborate "System of Surgery," however, four lines relate that in a successful attempt to improve the deformity of a receding chin, Von Bergmann made an extensive resection of all of the processes, including the coronoid process, and subsequently displaced the entire jaw by the aid of an artificial dental apparatus.

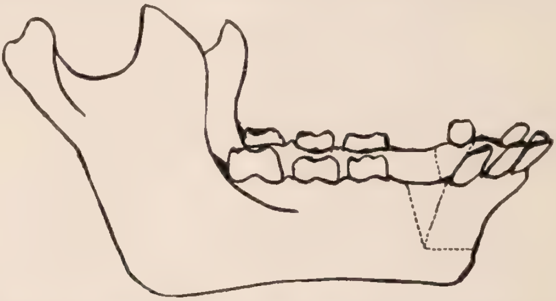


Fig. 1.—Diagram showing the osteoplastic resection of the lower jaw performed by Hullihen, July 12, 1848. The dotted lines indicate the lines of bone division with the saw. The triangular sections were removed from each side and the mobilized anterior segment of the jaw tilted back into occlusion.

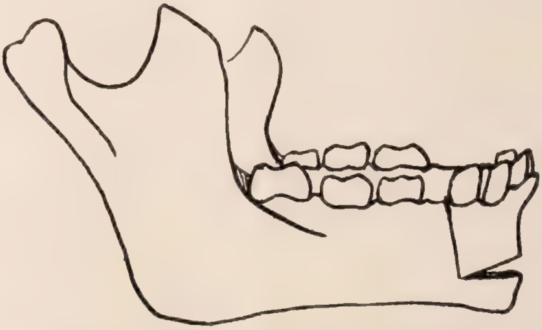


Fig. 2.—Diagram illustrating how the mobilized anterior segment was tilted back into occlusion in Hullihen's operation. This segment was held in position by a silver interdental splint. The nutrition of the separated portion of the jaw was maintained through its attachment to the lip. Similar types of operation are applicable to the upper jaw.

---

*Read in the Section on Stomatology of the American Medical Association, June, 1909. Published in THE SUMMARY by special arrangement with the *Journal American Medical Association.*

HISTORY OF THE SUBJECT

Over sixty years have lapsed since Dr. S. P. Hullihen,[1] of Wheeling, Ga., successfully devised and performed an osteoplastic resection of the jaw, yet the modern works on dental practice and orthodontia mention but a single operation, and that similar in principle to this one of antebellum days. Dr. Hullihen's patient, a girl of 20, had an eversion of the lower lip with elongation of the lower jaw and protrusion of the process and lower incisors from the constant traction of a scar from a burn of the neck received fifteen years previous. Although an unsuccessful attempt to improve the condition had been made by two surgeons in New York City,

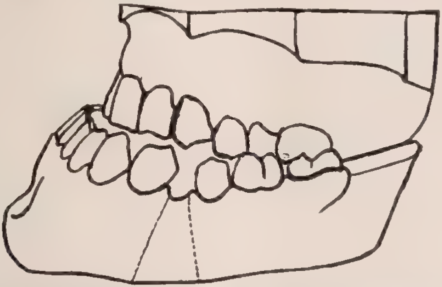


Fig. 3.—Diagram showing bilateral resection of the lower jaw advocated by Angle. A segment equal to that between the dotted lines is to be removed from each side of the jaw permitting the anterior part of the jaw to be brought into occlusion. The shape of the segments removed is to be modified by the conditions present in the particular case. Blair removed quadrilateral segments.

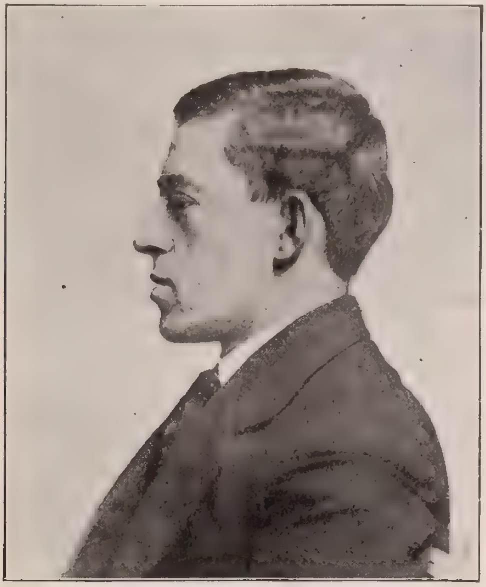


Fig. 4.—S. K., previous to operation, showing profile the result of inferior prognathism and malocclusion.

---

[1] Hullihen, S. P.: Case of Elongation of the Jaw and Distortion of the Face and Neck Caused by a Burn Sucessfully Treated, Am. Jour. Dent. Sc., 1849, p. 157.

Hullihen, without anesthetics, at a time when hemostatic forceps and antiseptics were unknown, boldly resected V-shaped sections from each side of the jaw, the section on the left side including the bicuspid. The V-shaped sections extended two-thirds of the way, through the bone, the apices being below. From the apices of the incisions the saw was turned horizontally forward, completing the section and leaving the upper two-thirds of the anterior portion of the mandible attached to the soft tissues only (Fig. 1). The removal of the V-shaped sections of bone permitted this loosened portion of the jaw to be pushed back, securing occlusion with the upper teeth (Fig. 2). From an impression taken in soft wax a silver plate was struck up which when applied held the section of the jaw in proper position. After this operation the tissues rapidly healed and Hullihen later transplanted a large flap of skin from the shoulder and upper arm to the neck to enable the head to be raised, and finally, by two further operations, corrected the eversion and deformity of the lower lip. Although these extensive operations were successful, nearly fifty years elapsed before a second bilateral resection to improve a deformed jaw was undertaken. The patient, a young man with a progressive type of prognathism, under the care of Dr. James W. Whipple, of St. Louis,[2] was referred to Dr. Edward H. Angle, who suggested a bilateral resection of the elongated portions of jaw between the first molar and second bicuspid on the right side and the first and second bicuspid on the left. A year later, in 1897, Dr. V. P. Blair performed this operation through angular incisions below the jaw. Despite imperfect retentive appliances, making it difficult to hold the fragments in proper position and the infection of the wounds, the patient, after nine very

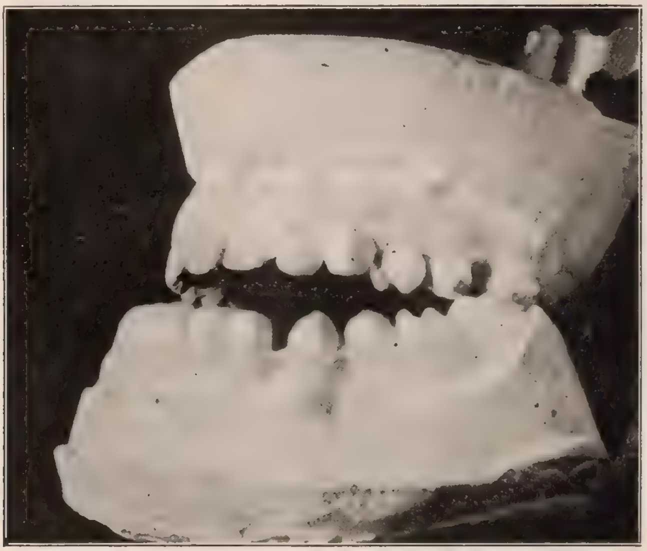


Fig. 5.—Model showing malocclusion in the case of S. K., left side.

---

[2] Double Resection of the Inferior Maxilla for Protruding Lower Jaw, Dental Cosmos, 1898, p. 552.

troublesome weeks, finally obtained bony union and marked improvement. Dr. Angle[3] in 1898 reviewed this operation and emphasized the importance of removing V-shaped or wedge-shaped sections of bone (Fig. 3) and of previously preparing from models accurate vulcanite or metal splints to

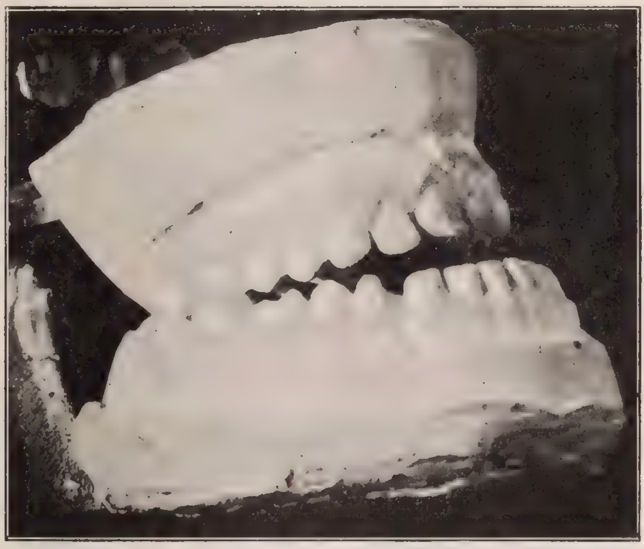


Fig. 6.—Model showing malocclusion in the case of S. K., right side.

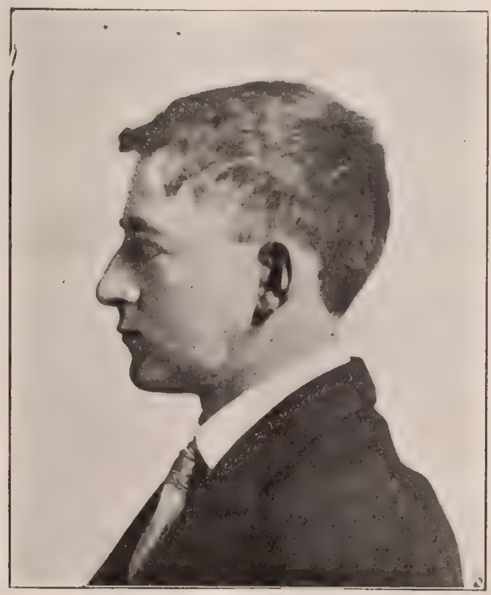


Fig. 7.—S. K., four months after section of both rami, showing change in **profile.** The scar from the incision is shown.

---

[3] Double Resection of the Lower Maxilla, Dental Cosmos, 1898, p. 635; see also, Bellin: Items of Interest, June, 1908, p. 422; Blair: Items of Interest, November, 1908, p. 829.

hold the fragments in proper position. In these cases, Dr. Angle writes, "any orthodontic procedure is powerless to render improvement and the double resection becomes the only resort." The same operation was independently advocated in 1896 by Dr. R. Ottolengui,[4] to whom the idea was suggested, by observing a resection of the lower jaw for cancer. Since the time of Blair's operation double resection of the jaw has been performed but few times, and this apparently important subject has not been further developed by the orthodontist, while the surgeon, although interested in resections of the jaw for necrosis, tumor or ankylosis, apparently has not realized the field for surgical measures for deformities beyond the range of the usual orthodontic practice.

REPORT OF CASE

My attention was attracted to this subject by observing a patient whose history is as follows:

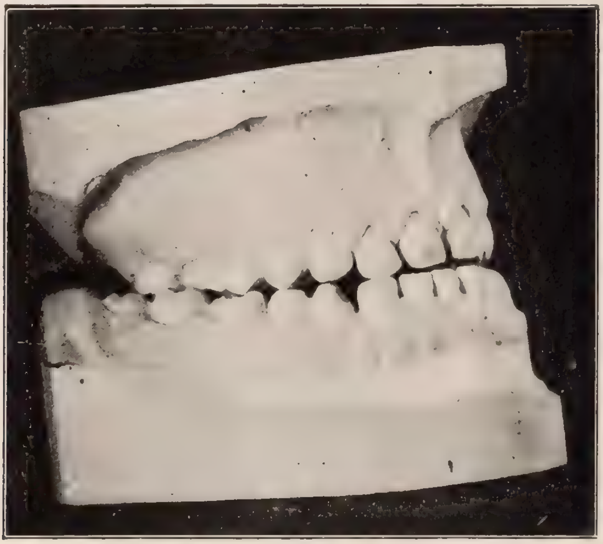


Fig. 8.—Model showing occlusion in the case of S. K., four months after operation.

Patient.—Samuel K., aged 18, family history negative. No serious disease of childhood was recalled. During the past two winters he had had recurrent attacks of tonsillitis, but apart from this and a slight cold, he has had no illness for ten years.

Examination.—The tonsils were large; there was a moderate increase of adenoid tissue in the nasal pharynx; the nasal septum was inclined slightly to the right, and there was a chronic rhinitis of the hypertrophic type. The patient breathed almost exclusively through the mouth; the palate was highly arched, the dental arches were symmetrical and the teeth fairly regular, although small, short and poorly developed. Only the third molars on the left and the second and third on the right side could be occluded, the minimal separation between the upper and lower central incisors being 7 mm., and the lower centrals being in a plane at least 5 mm. in front of the upper centrals. The chin was rather pointed and prominent, and the patient said that, although the teeth were probably never in good occlusion, the condition had progressively increased during the past four years. The lips were long and the teeth did not show in ordinary conversation, so that the patient had been repeatedly asked if the teeth had been lost. In smiling and in talking the lips tended to curl in over the teeth, producing an unpleasant expression. In talking the tip of the tongue rested against the lower lip instead of the teeth so that enunciation had a mumbling character resembling that of an edentulous person. The patient could not bite hard or thin masses of food except by introducing them far into the mouth. Mastication was very imperfect, the food being bolted after a slight attempt at mastication. The lips were kept almost constantly open except during speech (Fig. 4). The patient was moderately well developed, but the chest was long and narrow. He was constipated but did not complain of indigestion.

---

[4] Discussion, Union Convention, Rochester, New York, Dental Cosmos, 1897, p. 143; Fowler: Items of Interest, January, 1897.

Choice of Measures of Relief.—The young man had presented himself for acne vulgaris, but the ugliness of the facial profile led me to examine the jaw and then to consider the possibility of surgical relief. At once it occurred to me that a section of both rami would be the operation of choice, but on investigation, to my surprise, I found no evidence that such an operation had ever been done previously. The patient was referred to Dr. S. H. Guilford to make sure that relief could not be obtained by any form of dental appliance. Dr. Guilford agreed as to the necessity for surgical intervention and suggested the operation of Angle. This operation seemed to me objectionable for the following reasons:

1. It would necessitate two compound fractures of the lower jaw.
2. At least one tooth with the adjacent process would have to be removed on each side, and in the removal of these two teeth the exposure of the roots of two adjacent teeth on each side of the mandible would be almost inevitable. Thus two teeth would be sacrificed, and four additional teeth placed in jeopardy.
3. The inferior dental canal with its vessels and nerves would be divided on each side.
4. The arch of the lower jaw would be broken into three portions, would be contracted and would require a special retentive appliance.
5. As the surface of bone would be exposed to the action of saliva and to infection in the mouth a greater or lesser degree of necrosis would be almost inevitable.

In one instance this operation was followed by loss of the mandible from necrosis.

The division of the inferior dental nerve seemed the least of these objections, as this nerve often reunites after division and even were the local anesthesia resulting from the division permanent the condition is not a very troublesome one. As contrasted with this operation a section through the ramus (1) would be free from dangers of a compound fracture within the mouth; (2) would not reduce the size of the dental arch or jeopardize any of the teeth; (3) if carried out above the level of the spine of Spix need not involve the inferior dental nerves or vessels; and (4), as the bone could be reached from without the mouth under aseptic precautions, the danger from aspiration would be slight even should suppuration or necrosis ensue. The septic fluids would be discharged externally and not pass into the mouth to be swallowed or be aspirated in the lungs; (5) the proper occlusion could be produced if necessary by external pressure through a chin-cup, if need were, without the use of any interdental appliance.

As an objection to a section of both rami, my attention was called to the narrow antero-posterior diameter of the pharynx, and the danger of producing suffocation by carrying the lower jaw and the attached tongue backward. As the support of the hyoid bone would not be changed by the operation, and as it seemed to be quite feasible to reproduce the deformity should signs of suffocation follow from the procedure, the following operation was undertaken:

Operation.—The patient was narcotized by scopolamin-morphin reinforced by a small amount of ether, Dec. 5, 1908, and an incision carried through the skin and subcutaneous tissue over the posterior border of the ramus of the jaw from the zygoma to a point under and anterior to the angle of the jaw. This incision was not carried through the deeper tissues for fear of injuring branches of the facial nerve and parotid duct.

The outer fibers of the masseter muscle were separated and the external surface of the middle of the ramus exposed. With a small chisel a transverse section was then made through the ramus. The operation was repeated on the other side, and the body of the jaw then forced back, and the teeth placed in the best possible occlusion. To facilitate this a triangular segment of the ramus was removed on one side, a procedure probably unnecessary, and especially undesirable if the wedges, to be later described, had been used. The opening in the muscle, fascia and external wound was then carefully closed by buried sutures of catgut, certain of the lower teeth wired to the upper and an external plaster bandage applied. No symptoms of suffocation were produced, but on awakening the patient complained that there was insufficient room in his mouth for his tongue and that he had difficulty in breathing through his nose. The occlusion of the jaws closed the lips, and made them appear redundant.

Postoperative History.—In the after course of the case it was found that the contraction of the masseter muscles and the depressors of the jaw, by closing the triangular gap in the ramus, tended to separate the jaws anteriorly and the wiring of the teeth was found to be insufficient and was discarded. Through Dr. Guilford an interdental splint was constructed, but this likewise was not found of much advantage, so that recourse was had to pressure of an ordinary aluminum chin-cup connected by elastic bands to a head-piece. By regulating the tension of the bands it was found possible to bring the teeth into occlusion. This appliance was worn about nine weeks to give sufficient time for the new bony tissue to fill the gaps in the rami, but two weeks or more before the appliance was removed the patient began voluntarily to separate and to use the jaws. There was no tendency to ankylosis and the lateral and vertical movements of the jaw were well retained. As a result of the operation the patient's appearance has been greatly improved (Fig. 7), the lips have become shorter, the chin less prominent, the mouth is kept constantly closed. the enunciation of words is better, nasal respiration has been spontaneously established, food is properly masticated, the tongue is no longer kept between the teeth, the chronic constipation has disappeared, and, possibly as a result of the operation, or the cessation of mouth-breathing, there has been no attack of tonsillitis this winter, although the tonsils remain enlarged and the nasal catarrh continues.

For those who consider enlarged tonsils, adenoids and nasal obstruction a cause of mouth-breathing and of faulty development of the jaws, we have here some suggestive evidence that the correction of deformities of the jaw may conversely at times be followed by the spontaneous disappearance of the nasal obstruction and by failure of the large tonsils to produce symptoms. By this I would not controvert accepted theories, but would suggest the thought that mouth-breathing and oral deformities may at times be the primary and enlarged tonsils, adenoids and nasal obstructions secondary conditions.

(*To be continued*)

The moment that even the best men stop pushing and begin talking they mistake their pugnacity for piety—and it's all over. *Ruskin.*

THE ANTRUM OF HIGHMORE*

By A. J. Bercier, D. D. S., Opelousas, La.

THE antrum of Highmore is a large pyramidal air cavity hollowed out in the body of the superior maxillary bone on each side of the face; its walls are exceedingly thin, excepting the alveolar border. These walls are four in number, one extending towards the orbit, another towards the nose and roof of the mouth, the third towards the zygomatic surfaces of the bone, and the fourth is formed by the alveolar border. Its capacity varies in different subjects, ranging from one drachm to one ounce fluid, the average being about three drachms. Its floor is marked by irregular eminences corresponding to the roots of the molar teeth, which sometimes puncture it. Its walls often support thin plates of bone, which subdivide it, and a knowledge of this fact is very important, for in operating on tumors and abscesses the drill may simply penetrate one of these compartments and mislead the operator. This cavity is lined with mucous membrane and is continuous with that of the nasal cavity through a small opening which connects it with the middle meatus of the nose near the upper part of the sinus. Thus it may be seen that this opening does not afford a ready outlet to fluids that may collect in its chamber, particularly if the head is perpendicular; but upon lying on the side, the patient having a diseased antrum which contains fluids or pus, will detect droppings in the throat, which will exude through this opening in this position, and this is one of the presumptive evidences of a disordered antrum. The Antrum of Highmore, like every other portion of the human system, was designed by our Creator for a purpose. First, it allows proper contour of the face without the weight of bond that would be the consequence of solidity. It also makes the nutriment of the bone more easy, but its principal utility is the sounding chamber of the human voice, and the wide variations in the character of the tones produced are due in a large measure to the size, shape and conditions of the cavity.

From its anatomical description and physiological functions it will be readily seen that disease does not originate within its borders; but that it is liable to diseases originating from other sources there can be no doubt; and the most frequent and most simple of which are due to the following causes: A diseased tooth, the root of which may extend into its chamber and discharge therein a noxious gas arising from a putrid pulp, which, when condensed therein, forms pus, and which will be a source of irritation that will produce inflammation and necrosis. Again, in extracting roots of teeth, if one be forced through and into its chamber, this will be a source of irritation, and as long as it remains, the degeneration will be kept up. A low form of nasal catarrh will sometimes extend to the antrum and will produce what is known as antral catarrh and dropsy of the antrum.

---

* **Read before the Louisiana State Dental Society, 1909.**

The usual symptoms of these troubles are not always present, and the onset of the disease is apt to be insidious unless the opening into the nose is closed. In catarrhal inflammation there is a sense of distention and weight in the upper jaw, dropping in the throat, bad taste, bad smell, swelling and redness, an eye may protrude greatly, etc. The diagnosis is not difficult, and the treatment is simple and rapidly efficacious. My mode of procedure is, first, to make an opening through the floor of the antrum, which in most cases is situated at the juncture of the palatine root of the six-year molar. This is acomplished, first, by the use of a twist drill in a dental engine then the aperture is expanded with a reamer until it is at least as large as a lead pencil. When this is accomplished the cavity should be thoroughly syringed out with tepid salt water. When the cavity is quite clean, I then use a wash as hot as the patient can bear it, composed of two teaspoonfuls of boracic acid dissolved in a quart of boiling water. The water must be boiled in a porcelain-lined vessel, and a glass or hard rubber syringe used to convey it to the antrum. This is used frequently and copiously—in fact, I use one full quart morning and evening until a cure is effected. There will be instances, though, arising from a general anemic condition, or necrosis, where there will not be a speedy return to health. The inflammation may assume a low or chronic condition and the tissues refuse to respond to this treatment; and in such cases more rigorous measures must be resorted to. A solution of four or five grains of chloride of zinc to the ounce of water may be injected, and even stronger if found necessary. This will invariably bring about a better condition.

I do not always confine myself to one line of treatment, because conditions vary; but keep on hand, in addition to those mentioned above, the following medicines: dioxogen, permanganate of potash, aromatic sulphuric acid, adrenalin chloride and a good local anesthetic. These are the chief remedies used, and will be found all that are necessary. The use of plugs or drainage tubes should be entirely dispensed with, as they prove a source of irritation and are wholly unnecessary. In the treatment of all cases of inflammation it is especially essential that the patient be put on a good tonic treatment, and that the bowels act regularly.

Now, I have touched upon some simple forms of antral trouble with which every practitioner of dentistry should be thoroughly conversant; in my opinion, however, one who is engaged in a general dental practice should confine himself to the treatment of only these simple forms, and assign the more aggravated forms, where an extensive operation is required, to surgeon specialists in some sanitarium where they are especially equipped with all modern conveniences essential to antiseptic surgery, combined with trained assistance.

HOW SHALL THE STOMATOLOGIST BE EDUCATED?

Continued from page 737, August Summary.

ABSTRACT OF DISCUSSION.

ON PAPERS OF DRS. TALBOT, POWER AND CRYER IN AUGUST DENTAL SUMMARY.

Dr. J. N. Farrar, New York: A complete medical college course of instruction is necessary to success in any branch of medicine. The time needed for such education is the incubating period preparatory to any specialty. No specialty should be attempted without a complete course of medical instruction. Especially is this true in stomatology, if the deeper physiologic lines of the science and art of highest orthodontia are to be well understood.

Dr. Arthur R. Dray, Philadelphia: There was a time when the medical man was required to gather herbs, etc., and to make his own medicines. Today, with few exceptions, he has neither time nor qualification to do the work of the pharmacist and druggist. So also today we find the dentist, compelled by the many calls on his time, to give much of his work to the mechanic. Tomorrow the dentist will cease altogether to splash about with plaster of Paris and flasks, to burn his fingers pouring zinc dies or to smash his thumbs swaging gold plates in an effort to satisfy the patient's needs. The strictly mechanical man, not needing any medical knowledge whatever, will satisfy all these wants, leaving the dentist free to treat diseases and conditions. What does this mean? Why, that the dental student of today who spends three or five hours out of every ten in the laboratory, could put this time at the disposal of medical studies and operative work. In the best dental colleges of the United States today ten to fifteen hours or more a week of the schedule periods of the student's roster are spent in the mechanical laboratory learning a trade—a trade that could be better followed by a man devoting his whole time to it, who never need see a patient or operating chair. If in the medical curriculum of any reputable medical college the strictly dental specialties are inserted in place of the strictly medical specialties we have a good working idea of the studies which the dental student would have to take to qualify himself as a dental specialist of medicine. By strictly medical subjects I mean such subjects as orthopedics, gynecology, ophthalmology, obstetrics, mental diseases, medical jurisprudence, pediatrics, etc. The dental subjects should be taught in conjunction with the medical course, being focused on with special effort as the final years are reached.

Four years is not too long a period to spend in preparation for a lifelong work. Five or more years would be a better term. By suggesting the curtailment of the time spent on the strictly medical subjects I do not for one moment wish to imply that they should be altogether slighted, for my belief is and always will be that dentistry is a specialty of medicine and should not be followed until a medical qualification has been received. Let our dental schools of today give a special course if they wish, granting a special license and a special degree in mechanical dentistry, this course confining itself entirely to mechanics, lasting but two years; but let them not make an effort to work against impossibilities by teaching medicine and mechanics to the same student in less time than it takes to get a medical degree.

Dr. Eugene H. Smith, Boston, Dean of Harvard University Dental School: To my mind there are but two practical methods of educating young men for dentistry. One method is so to shape their education from the beginning that it will lead directly to the specialty of dentistry; the other is first to give them a general medical education leading to the degree in medicine, and to follow this with two years of special training. In either case the preliminary training should not be less than that obtained in a four years' graded high school, which fits students to pass the entrance requirements to our leading colleges.

By the first method, if we are training students for a dental degree alone, the first year should be devoted to the fundamentals of medicine, namely: histology, physiology, bacteriology, and physiologic and dental chemistry. General chemistry should be required for entrance. The first-year medical studies should be planned to give special and advanced training on subjects that especially concern the dentist. The second and third years should be spent in a dental hospital. The clinical work should be carried on in conjunction with lectures, and the students should be taught to make application of the medical work of their first year to the cases they treat in the hospital. I think it a mistake for a dental student to have training in special dental work during his first year of study.

The second method of training a student in dentistry is to enter him as a regular student in a first-class medical school and have him obtain the M.D. degree, after which he should enter on a two years' course in a dental school leading to a dental degree.

Modern dentistry has become so extensive a profession in itself, and modern medicine so vastly different from the medicine of a few years ago, that it is a serious question in my mind whether a student can be properly educated in medicine and in dentistry in less than six full years. If I could be sure that the combined medical and dental training that I have outlined would produce skilled men as well as scientific men I should be strongly in favor of such training. I think, however, that there should be two degrees indicating this training, rather than to have dentistry practiced under the one degree of medicine. We must never lose sight of the fact that in a specialty in which so much technical skill is required it will always be necessary so to shape our courses as to produce skilled practitioners, even though we may do it at an expense of scientific men, using the term "scientific" in its broad sense.

Dr. M. H. Fletcher, Cincinnati: I am in thorough accord with the idea that many dentists, if not all, should have a complete medical education in addition to their mechanical training, since it fits one most satisfactorily for the practice of stomatology. In fact, I do not see how one can be fitted for the practice of stomatology without a full medical education, any more than one can be prepared as an oculist or throat and nose specialist without medical training. No dental college of which I have any knowledge so fits a student, since the dental courses in anatomy, physiology and pathology are decidedly inadequate. The average dental operation can be well performed without much knowledge of the laws of health and disease of the tissues, but the successful treatment of diseased tissues in the mouth and their systemic effects requires a knowledge such as can be attained only by taking a complete course in medicine and surgery.

My own judgment is that we should have stomatologists and dentists; let the dentists stop where they do now, but a student in stomatology should first take his work in the mechanics of dentistry and follow this by special medical work, the two overlapping in the middle of the course, for instance the mechanical overlapping the medical in the latter part of the second year or the beginning of the third, ending the course with the medical work in the fourth or fifth year according to the length of the course. In a five-year course (which I think is short enough) the first two years should be devoted to dentistry, the medical studies beginning in the third year while the dental work is being finished. The last two years should be devoted to a medical course and hospital work such as is now required of medical graduates in the average American medical college with clinics and practice in higher dentistry, oral surgery and treatment of the diseases of the mouth.

The difficulty about the practical working of this or any plan requiring dentists to take a full medical course is that, if one spends the time and energy to take a medical course, he is almost sure to practice medicine and not dentistry nor stomatology, for the reason that the returns in medicine, both intellectual and financial, are greater than they are in dentistry or stomatology.

To be a perfectly fitted stomatologist requires greater versatility and training than does either dentistry or medicine alone, for a stomatologist must be first a skilled mechanic and artist, then a well-posted physician and surgeon. I believe that neither the fees nor the breadth of the scope in this specialty are great enough to attract many to it who have the capacity to do both well, and I imagine that for some time in the future, as in the past, we shall have many dentists and very few stomatologists. I believe that there should be a special degree conferred in certain colleges to distinguish a stomatologist from the average dentist.

DR. STEWART L. MCCURDY, Pittsburg, Pa.: As a practitioner of general surgery as well as surgical stomatology, I have observed first, the lack of knowledge on the part of the dentist of the general medical branches, and second, the lack of knowledge on the part of the medical practitioner of oral diseases.

The remedy, it appears to me, would be plain, i. e., more medicine for the stomatologist (dentist) and at least some oral pathology and surgery for the medical student. The physician knows practically nothing of the pathology of the mouth. That the future will have in store for students a four-year course for dentists and a five-year course for medicine is a probability. When this does occur the method of instruction will, no doubt, be for students in both medicine and dentistry, to take the same course for two years. This will leave two years for the stomatologist to complete his course and three years for the student who desires to specialize in medicine to complete his course.

DR. J. P. GRAY, Nashville, Tenn., Secretary of the Department of Dentistry, Vanderbilt University: I am not quite sure that I could recommend a full medical course for dental students. I fear that the length of time would prevent a student from first taking a medical course and a dental, and that the majority of students applying for a dental course would not go further after taking the medical. Most men would not have the means to do this extra amount of work. I would require the dental student to take the first two years of the fundamental branches of medicine with the medical students, being required to do all the laboratory work required of the medical student; then I think it would be better—if it could be so arranged with the medical schools—to eliminate some parts of the medical course, and in addition to substitute some studies of the dental course. Some of the work in the dental schools might be eliminated, but most of it should be given in connection with the medical course. There is no reason why genycology, obstetrics and other medical branches could not be taken out of the medical course for the dental student and yet a degree be given commensurate with the work done by the latter. The dental branches require considerable amount of technic—more than is required in ophthalmology and otology—and a student should have some of this technic in his junior and senior years. By the elimination of the extra branches in medicine and the addition of the dental it seems that a sufficient amount of technic and dental instruction could be imparted, and a student would still have a course equal to that of some other branches of medicine. If we are to give a purely medical course, I should make the students take up the study of the fundamental branches the first two years with the medical students; then I should give the dental course with a few of the medical studies, leaving the technic for the third and fourth year of the school, and add one year more to the completion, making five years.

I have not found in my experience of twenty years as a teacher that medical men coming to us—and we have had quite a number—make first-class operators. It may be that we have received those who have been failures in medicine. I can recall but one man who made a good student and who really was highly benefited by having studied medicine. I think that the medical schools are making a mistake in not allowing some credit to students who have attended dental schools. I know the courses given here in the fundamental branches, such as anatomy, physiology, histology, pathology, materia medica and therapeutics, should give a man at least one year off, if not one and one-half years in the medical school. If they were not satisfied with them after an examination, they might then dismiss the student. The medical colleges could find out the dental schools worthy of recognition. I do not think the course in some dental schools worthy of recognition by the medical schools.

Dr. N. P. Colwell, Chicago, Secretary of the Council on Medical Education: No man should pose as a specialist in the treatment of any class of human ailments, whether diseases of the eye, of the stomach, of the nervous system, or of the mouth, unless he has first had a full medical training. Whether every dentist should first have a complete medical training or not is a question which may need considerable discussion. It may certainly be said, however, that there should be some way to distinguish between the dentist who has had a complete medical training and the one who has not. Certain it is that the former is in position to recognize more clearly causes of certain diseases of the teeth and gums than the latter, and, therefore, is enabled to treat such conditions more intelligently.

Suppose, therefore, that all dentists shall first have a complete medical course, followed by the course in dentistry. This would mean, first, that all dentists would have a better preliminary education which would include a training in physics, chemistry and biology; second, they would have more thorough courses in the fundamental medical sciences of anatomy, physiology and the like, which are now only briefly touched on in the usual course in dentistry; third, they would all have a knowledge of the etiology, symptoms, prognosis and treatment of the more common diseases not now possessed by most dentists; fourth, it would mean a higher order of intelligence of those who are to practice dentistry, and last but not least, it would mean more intelligent treatment of patients, more permanent fillings in tooth cavities, more prompt treatment of many diseases of the gums and the prevention of many such diseases and of their sequelæ, such as diseases of the antrum of Highmore, of the frontal and accessory sinuses and the like. Furthermore, if all dentists were so educated there would doubtless be a more effective movement to educate the public to more proper care for the teeth.

The chief objection would be the more prolonged course of study required, but if the dental profession, like medicine, is already overcrowded, then the future should possibly develop fewer but better dentists even as in medicine the demand is for fewer but better doctors, or, as President Faunce puts it, ''fewer doctors but more doctor.'' After the completion of the four-year medical course it would not require an additional three years to complete the course in dentistry, since many of the subjects would already have been completed in the medical course and much more thoroughly studied than in the usual course of dentistry. Anatomy, physiology, chemistry, pathology and possibly over half of the dental course would have been completed. The time for the two courses might be further shortened by allowing the election of certain special courses in dental anatomy, dental physiology, dental pathology, dental surgery and the like, thereby leaving for a fifth year the strictly dental subjects and for clinical courses in the special study of diseases of the mouth. Since many systemic diseases have some of their first symptoms appear in the mouth which would be discovered by the routine examination of the gums and teeth, it is very important that the subject broached in Dr. Talbot's very able paper be given the most careful consideration.

Dr. Arthur D. Bevan, Chicago, Chairman of the Council on Medical Education: The problem of the stomatologist's education is certainly a difficult one to solve. It seemed to me that if five years could be devoted to the study of dentistry, the student might put in the first two years in the scientific laboratory branches with the regular medical student, and that he might take one year in general clinical medicine and surgery and two years limited to oral surgery and dentistry. With such a training, I should think that he should receive the same sort of a degree and be recognized as a doctor of medicine limiting his work to stomatology and with just as much right as the men who are limiting their work to diseases of the eye, ear, nose or throat. It would seem to me that such a course would give him a broad training for his work.

Dr. John M. Dodson, Chicago, Dean of the Medical Courses, University of Chicago: True stomatology bears the same relation to general medicine and surgery that is borne by ophthalmology, laryngology, gynecology or any of the specialties which have to do with particular organs, or portions of the body. Doubtless dentistry, in its present narrow or restricted form as a mechanical art, has grown up independently of medicine because the purely mechanical side of that vocation—the filling of teeth, the manufacture of artificial substitutes for the teeth, etc.—occupies so large a part of the time of the dental practice.

It seems clear to me, however, that the diseases of the mouth and teeth are so intimately related to pathologic states in other portions of the body that they can be intelligently and successfully treated only by one who has been thoroughly educated in medicine. I believe, therefore, that the stomatologist of the future will be, first, a well-educated man, who has secured as the very minimum of preparation for his professional study, the equivalent of four years in high school, plus two years in a literary or scientific college; and, second, an educated physician, which means, at the present time, four years of training in a well-equipped medical school, this to be supplemented by at least a year of training, as an intern, in a general hospital or its equivalent in general practice outside a hospital and, third, a specialist, qualified in the treatment of diseases of the mouth and teeth by at least two sessions (eighteen months) of attendance and training in the dental department of a university. A similar course of training for the other special branches of medicine is now provided in at least one of the university medical schools.

Possibly the individual then adequately prepared for the practice of stomatology will find it of advantage to relegate a considerable portion of the purely mechanical part of his practice, *e. g.*, the manufacture of artificial dentures, of crown and bridges, of gold and porcelain inlays, to artisans who will devote themselves wholly to such work. It is idle to contend that because the fundamental medical sciences (anatomy, physiology, etc.) are included in the curriculum of the dental school, the dental student receives an education in these branches at all comparable to that acquired by the medical student. The medical school was forced to abandon the practice of granting to the dental graduate advanced standing in these subjects, because his preparation in them was found to be wholly inadequate for the intelligent study of clinical medicine. When dentistry or stomatology comes to be generally taught in a thorough and effective manner, then and then only will it be entitled to rank among the recognized special branches of scientific medicine. There are today a number of stomatologists of this type—men who are graduates in medicine as well as in dentistry.

Dr. Frederick B. Noyes, Chicago: The development of the last ten years has divided medical education into two periods of two years each, the first devoted to the study of the medical sciences, the last to the application of them to the practice of medicine. The stomatologist requires the same training in the medical sciences, but the second period should be given to their application in the treatment of diseases of the mouth. That this will be about the line of progress in the future seems certain to me. It is absurd to suppose that the stomatologist should have the same training in gynecology, obstetrics, amputations, abdominal surgery, or histology, pathology, materia medica, etc., as the medical men.

After fifteen years of teaching in the dental schools, I feel that the greatest fault to be found, at least with the better schools, is the quality of the elementary work, and that this spoils the quality of all the professional studies. This condition is not confined to the theoretical or scientific subjects, but is true also of the technical and mechanical departments. There has been too much crowding for the accomplishment of a large amount of dummy dental operations requiring the construction of a specimen of every new type of bridge or denture, and especially every pet device of the instructor and too little attention to the acquirement of skill. Judged from the standpoint of the fine mechanic, the average dentist is not skilful. There has been too much tendency to despise the mechanical side of dentistry. I believe that at the present time the dental schools fail to make a reasonable percentage of their graduates mechanically skilful, and that those who excel in skill do so because of a training acquired outside of the dental schools.

It seems very desirable that the stomatologist's course should be so planned that it could be begun immediately after high-school graduation, but so as to induce as many men as possible to take more collegiate work before beginning their professional studies. This would be accomplished if two years of collegiate work before the first two years of professional work would give the B.A. or the B.S. degree. But students entering professional work direct would receive only the professional degree. The decision between stomatology and medicine should be made at the beginning of the professional work, or, in the former course general mechanical training should be given, with the fundamental medical science. This should be in the form of applied mechanics of the finest order and designed for the acquirement of skill in the handling of tools. In the last two years the technical training should be in the application of the skill acquired to the performance of dental operations and the pursuit of the medical sciences into the field of stomatology. Finally let me repeat that at the present time failure to do thorough work in the elementary subject, both scientific and practical, is the greatest fault. Three years is too short a time to do what is undertaken in the dental school and, more important than this, dental students are not required to work as hard as students in other departments of the university. The work is arranged for the poorest students. The best students find it is easy to do what is required and have not sufficient incentive to do any more.

Dr. George V. I. Brown, Milwaukee, Wis., Professor of Oral Surgery and Oral Pathology in the State University of Iowa: The ideal medical course, one comprehending premedical education leading to a degree in arts or science, then four years of medicine, at least a year of hospital service, and then approximately two years of post-graduate preparation for special or other practice, and at best a few additional years before an independent practice can be acquired, is no longer ideal when one stops to realize the hardships it entails on the less fortunate though often worthy students and the crippling of the best usefulness of many other individuals by destroying the first enthusiasm of youth and postponing the day when they can seek independence, in this day of intensely active business and professional pressure, until they have arrived at a mature age, when such knowledge comes slowly, or at the expense of much hardship if at all.

All this does not imply that these courses should be shortened, for on the contrary they are essentially necessary, but it does mean that there must be reconstruction of the educational system from the primary school up, in order that more advanced or at least better selected work may be done before entrance to college. The gymnasium in Europe accomplishes this. Why not our high schools?

The first year's course as now arranged for dental students in university and the best other schools requires attendance on nearly all of the same classes as the medical students, and in addition thereto a considerable number of hours of special laboratory work. The result is, that students of dentistry cannot as a rule do the thorough work required of students of medicine, and to this extent at least, the educational result is defective; therefore these students are not entitled to full medical credit for this portion of the work. Slight rearrangement of the curriculum by having one freshman branch carried forward to the sophomore year and an equivalent reduction in the number of laboratory hours for operative or prosthetic technics, would enable them to fully qualify in all medical branches taken at this time and yet have the advantage of early manual training. Continuance of this system from year to year would create practically no confusion and in the fourth year which as now arranged in medical colleges is largely devoted to clinical work, the branches carried forward could be completed and dental operatory work begun. An additional year of clinical, surgical, medical and dental work would in five years give better preparation than could be accomplished even in six years if either medicine or dentistry alone were completed and the other taken as a post-graduate course.

The plan of work outlined could, if desired, be inaugurated at the beginning of any term in any high-grade medical college without serious disturbance of courses as now arranged, and is sufficiently elastic to keep pace with any changes in the curriculum that advancing conditions might make necessary without creating disharmony in the schools directly interested.

DR. FRED C. ZAPFFE, Chicago, Secretary of the Association of American Medical Colleges: I have the highest regard for dentistry, and I would not for a moment have it thought that I disparage the tremendous advances that have been made in that specialty. But dentistry has arrived at the parting of the ways. It must establish itself either as a profession or a trade, an art or a science. It has always seemed to me that dentistry, to be regarded as a profession, should ally itself with the professions. As it is today, dentistry is neither a profession nor a trade. It is practically in the same class as optometry. Dentistry has extended beyond its original scope—the treatment of diseases of the teeth; it now comprises the treatment of all the diseases, injuries and malformations of the mouth. It is really on a par with ophthalmology, otology, laryngology, etc. And yet, the ophthalmologist, before he can be regarded as proficient in his specialty, must have a medical foundation and from three to five years of special study. Medical educators are keenly alive to the necessity of devoting more time in the college course to general medical education, and less to the so called specialties in medicine. The specialists insist on thorough preparation in the fundamental and subsequent study in the chosen specialty, because a thorough knowledge of the fundamentals in medicine is a prerequisite to competent and efficient specialization. But note that there must be the preliminary training in the fundamentals. At least half of the course in dentistry today is given over to the study of fundamentals, which are the same as those in medicine. Dentistry must properly be regarded as a part of medicine. It is based on a proper comprehension and understanding of the causes and the development of diseases of the mouth and teeth. It is no longer merely a matter of knowing how to prepare a cavity and to fill it with suitable material, or of knowing how to construct an artificial denture. That is the mechanics of dentistry and is on a par with the work of the optician.

The dentist must know why the diseased condition is present; what it means, and how it can best be treated. He must have more than finger training; he must know pathology. To know pathology, he must know anatomy, physiology and chemistry.

He can get such training in the medical school better than anywhere else. Why not, then, elevate the practice of dentistry to the distinctly professional plane? Why not establish it as representing special study? Why not make the dentist in every way a better man professionally and educationally than he is today? Let him get his special training after he is well grounded in the fundamentals. The specialty of dentistry will then occupy the same plane as ophthalmology and the dentist will be a graduate in medicine, with special training in the treatment of diseases of the mouth—in other words, a stomatologist.

Just how much special training he should have the stomatologist must determine. Schools of stomatology and stomatologic societies will take care of that. An education in stomatology will not be any more costly than an education in dentistry, and the graduate from such a course will be better equipped, better prepared to practice his specialty and regarded as a professional man and not as a dentist.

DR. H. A. POTTS, Chicago: At the meeting of the National Association of Stomatology, held in Paris, in 1907, it was settled that a complete medical education must be required of every dentist. Granting this, the problem of securing it confronts us.

The dental school which requires a medical degree for entrance will go begging for students, and many who do enter will be those who have made a failure in medicine.

On the other hand, the best-equipped dentist will be the one who, after receiving his dental degree, continues his medical studies, finally receiving his medical degree, followed by an internship in the free dental dispensary, much the same as is now required by some medical schools.

One solution of the problem would be, first, to have the dental colleges and medical colleges under university control, with the same requirements for admission to each; second, that the dental college and medical college, belonging to the same university, be situated near each other; third, that the departments of dental histology, dental physiology and dental pathology be established in the medical school; fourth, that the medical students and dental students take the same courses for the first two years; fifth, that the dental students then pursue their clinical dentistry and the medical students pursue their study to completion.

Thus the medical student will have gained more knowledge of dental conditions as they are related to medicine, and the dental student will have acquired some knowledge of medicine, which is sadly lacking under the present regime.

The dental student, and many a graduate as well, looks on a patient with some pathologic condition of the mouth as being ''in his line'' or ''out of his line'' of treatment. When he has filled all the carious cavities, he thinks his work done. He should be able to group the whole pathologic picture and know the relation of conditions in the mouth to other conditions of the body which require medical treatment, in order that he may intelligently call in counsel or refer the patient to some one capable of caring for him. In other words, he must be able at least to make a probable diagnosis of the case in general, just as in medicine, it is not enough that a physician make a diagnosis of pulmonary tuberculosis; he must be able to say how far advanced it is; he must know the condition of the digestive and eliminative organs, what complications exist, whether the patient is a menace to the health of others, or not. Tersely, he must be able to make a complete diagnosis.

The dentist should have courses in physical diagnosis, both clinical and laboratory. His experience in handling patients in the free dispensary of the medical school will be of inestimable value to him in handling his own dental patients. Only by actual work in inspection, palpation, percussion and auscultation on patients suffering from various diseases will he be able to grasp the whole picture and become familiar with the living pathology of the mouth, and see its connection with general pathologic conditions. If he fails in this, his medical degree and the time taken to attain it have been for naught.

Dr. Eugene S. Talbot, Chicago: I am surprised and pleased at the unity of opinion expressed by the able teachers coming from different parts of the country and occupying such varied positions in the teaching world both in medicine and dentistry. On one point all agree and that is all dentists should be stomatologists practicing under a medical degree. All seem to agree that the medical course should be so arranged that the fundamentals of medicine should be the foundation on which to build all specialties. First obtain the medical degree and the specialties studied afterward. This will place all specialties on an equal footing. This method seems reasonable and easy to accomplish.

Like the medical schools in this country, there are more dental schools than can exist. There is no need of more than one school in a state. Let the weaker schools unite with the stronger or disband. About fifty-four medical schools have either given up or joined stronger and better equipped schools in the past five years. Twenty or twenty-five dental schools can go out of existence and never be missed. Let twenty-five of the best schools become actual departments of universities and an ideal specialty can thereby be developed.

THE·SUCCESSFUL DENTIST

EXTENDING ACQUAINTANCE

By C. N. Johnson, M. A., L. D. S., D. D. S., Chicago, Ill.

WHEN A young man locates in a place it becomes necessary to extend his acquaintance as widely as possible along legitimate lines in order to rapidly gain patronage. If he goes a stranger into a town, or even into a city, it is always desirable to take letters of introduction to the influential people of the place. The first move he makes is very important, particularly with regard to the character of the people he meets. He should aim to cultivate good society at the outset, not necessarily—and often not preferably—the swell set, but people of good moral and business standing.

LETTERS OF INTRODUCTION

In presenting a letter of introduction the young man should exercise great care not to prejudice his case by consuming too much of the recipient's time. Usually men or women worth meeting have many demands on their time, and if a young man approaches such an individual without due regard for this fact, he is quite likely to prove a bore. Let him present the letter in a business-like way, stating that he is desirous of making their acquaintance, but that he does not wish to waste their time. He can readily gather from the nature of the answer he receives just how much leeway he has in this particular, and can govern himself accordingly. Usually people of the right sort are glad to welcome newcomers to a town; and if the young man makes a favorable impression at the outset, it is not a difficult matter to extend his acquaintance. After he has met a dozen people in the place, his success from that time forward depends on himself. He should beware of boasting too much about what he proposes to accomplish in the way of practice particularly if he goes to a place where there is already a dentist, but he must at all times preserve an air of quiet confidence that he will succeed. The unobtrusive self-assurance that he has within him the certain elements of success, the constant conviction that he must win, no matter what obstacles are placed in his path, this of itself is a potent factor in carrying a young man to success. No man ever yet accomplished great things through the medium of despondency. Let the young man place the most promising construction on his prospects, but let him do it in such a way as not to give offense. A vulgar display of conceit always engenders distrust and reacts against the individual, but an attitude of calm assurance backed up by steady application creates confidence and more than half wins the battle.

THE FIRST PATIENT

The first patient a young man puts in his chair for professional services should mark an event in his life. No matter how humble in position or circumstances this patient may be, the dentist should seek to make a favorable impression. In fact, in the management of each individual who applies to him the aim should invariably be to so treat the patient that it will result in the sending of other patients. The recommendation of an individual who has been in the hands of a dentist counts for more than any other kind of advertising. Show each patient that you have a vital interest in his or her welfare and that your relationship with the public is different from that of a tradesman. Advise the patient always for what you believe to be the best, irrespective of your own financial relation to the matter, and when the fact that you do this becomes known, as it surely must, it will prove a strong tie to bind people to you.

The dentist should early seek to establish a community of interest between the patient and himself, so that their relationship becomes something more than a mere barter of money for professional services. He who develops an abiding friendship between himself and those who come to his office will never lack for patients, and some of the most cherished associations of a life time may be made in this way.

SOCIAL FUNCTIONS

Extending acquaintance through the medium of social function is a perfectly proper thing to do, though the young man should have a care not to deport himself in such a way as to raise the suspicion that he is trying to advertise his profession. In fact, there is nothing more lacking in good form than the habit of talking shop at a social gathering. Aim to be cordial and pleasant with everybody, so that people are attracted to you by virtue of your personality. There is no other quality so winning in society as that of invariably being a perfect gentleman, and this is something a young man can acquire by a close study of what is considered good form. The prime requisite for success in society is a never-failing and genuine courtesy. This will win where mere flashiness, either of apparel or wit, will fall short of permanent success.

If a young man draws people to him by virtue of his inherent qualities of sturdy manhood and uniform good will in society, they will naturally inquire into his calling, and the next step to that of their patronage is easy. But there is one feature of this that requires careful consideration. It is better always that people should not become personally too friendly or familiar with the dentist, for the reason that in the proper conduct of a practice there are always certain requirements which the dentist must demand of the patient and to which the patient if approached on a strictly professional basis will graciously accede, but which if the dentist is a close personal friend will not be so likely to be considered obligatory. In other words, it is more difficult to establish legitimate professional discipline with a friend than with a stranger. The one matter of appointments will serve as an illustration of what is meant. It is necessary for the dentist, in order to profitably occupy his time, to arrange for his work on appointment, and it is to him a question of considerable moment that appointments be kept punctually. With a stranger this is quickly recognized and abided by, but an intimate friend is quite likely to ignore his obligation on the ground of familiarity and to presume on his friendship with the dentist for all kinds of laxity. As has already been said, it is better to obtain patients among strangers, and then, when they become familiar with the business methods of the dentist they will not depart from those methods and can safely be made into close personal friends.

THE CHURCH

The church is often used as a means through which to extend acquaintance, and under certain circumstances it is a perfectly legitimate medium. The close personal relationship of the members of a church and the frequency with which they meet each other all tend to favor the rapid spread of personal acquaintanceship, and there is quite naturally a bond of common sympathy arising from mutual aims and interests which links the members together more closely than under ordinary associations of life. To fall in with this in a natural way on the part of a man who is at heart a sincere professor of religion and whose proper place is found in the church is well and good. There can be no criticism of this; and if a young man creates acquaintance under these conditions he may honorably find it of benefit to him in a business way.

But there is nothing in all the category of professional meanness which can compare in the slightest degree with an effort to use the church as a medium of securing practice on the part of a man who otherwise has no interest in it. To pose as church-going man or as one who has religious motives by an individual whose only aim is to further his business ventures is the basest of all perfidity and should entitle him to the hearty contempt of every one. Hypocrisy is bad enough in any relation in life, but hypocrisy which uses the church as a cloak behind which to build up worldly interests is absolutely beyond the pale of decency or tolerance. Unless the young man has religious instincts, or can go to church with pure motives for the purpose of receiving mutual or moral benefit, he would better stay away; or if he desires to go as a means of social enjoyment, let him at least avoid assuming a sanctimonious air or taking any prominent part in the functions of the church. In other words, let him avoid hypocrisy or deceit. No matter how successful men may seem to be at this kind of game for a time, his sins will surely find him out, and his ultimate portion will be contempt and distrust on the part of the people. Even if he could succeed in deceiving the people, and thereby secure their patronage, there is always behind every hypocritical act a corresponding disintegration of character in the individual himself which ultimately will undermine the strongest personality and defeat the shrewdest aims.

Let the young man be honor-bright in every relation of life, but particularly let him avoid trafficking with things so sacred as the religious convictions of the community in which he lives. I would rather cope with an open-handed devil any time than trust for one moment the fawning pretence of a sanctimonious hypocrite. Permanent success never yet came from following unworthy methods, and of all of these methods none is more detestable than the one of working the church for professional purposes.

MISCELLANY

DENTISTRY AND THE NEEDS OF THE DENTIST[*]

By Alfred Owre, D. D. S., Minneapolis, Minn.

IT IS PERHAPS right to suppose that the average new beginner in any calling has but a vague or general idea of the life work before him; the deeper meaning to it all sometimes remains obscure for a very long time, and even if grasped early in the course, is apt to be laid away as a theoretical point rather than a working basis. This may be due to our present environment which is perhaps a little too materialistic when compared with our traditions and ideals. It is not the intention of this lecture to hold up an altogether unobtainable ideal; we are all so unwillingly steeped in the commercial and material forces around us not to take notice of them; we must adapt our lives to the age in which we live and to our immediate community in every detail, but nevertheless a *very high ideal* must stand forth through all our activity. This ideal should be the same in all pursuits, but owing to the variety in the accepted ethics of some pursuits, we shall find several perplexing problems confronting us through our professional life. It is therefore best that we should have some understanding quite early of what dentistry means, so that our thoughts can revert to this ever vexing question of more perfection, adjustment and adaptation. It will, therefore, be necessary to dwell upon our own history and development to some extent, and our fusion with, and in general the utility of universities; we may also emphasize the value and meaning of the particular dental course, and conclude with some generalizations.

We should know something about our own origin and growth in order to take a proper interest in the great question of evolution; it stimulates further progress because our history is one of progress from a very humble beginning to a height which promises much for its devotees, and greater benefits to humanity; and this, let me say at once, answers briefly the greatest question of all. We should know something about our history because it shows us the mistakes which we should avoid; particularly do we see that we are decidedly useful parts in the general scheme of things, and that as such we must enter more fully into general life and by careful study find our correct places in society or the world.

We should know something about the utility of the university because it stands for the conservation and diffusion of knowledge, the promotion of science, and the *furtherance of the welfare* of our fellow men. We are not through with the university after graduation, *not by any manner of means.* It is then that the greater connection with this high institution begins. We should know something about the source itself in order to apply ourselves with all energy possible in every detail; many items seem useless and obscure at first, and this sort of thinking is not a healthy stimulus to begin with.

---

[*] Opening lecture at the College of Dentistry, University of Minnesota, September, 1909, being in part an adaptation of President Gilman's views.

In delving briefly into our past then, we are immediately confronted with the universal lack of authentic information. If it is true, however, as Ruskin says, that the literature of a nation is a reflection of its life, and that we can measure the social status of a people by the result of its productive energy, then we can arrive at some sort of conclusion in regard to the achievements of our forefathers in dentistry. So far as I know, no great civilization has existed without paying some attention to the care and treatment of teeth in health and disease. During the height of Egyptian civilization we find reference to the dental specialist attendant at court, and it is barely possible that information spread in all directions, or it may be that we had a simultaneous origin in the extreme orient where we find mention by the Chinese of the tooth brush 1,500 years B. C. At any rate, from this time on scarcely any great people lived who did not pay quite as much attention to the diseases of the teeth as to other organs; literateurs, naturalists, and general historians all refer to some phase of dentistry often enough to remind us of the fact that we can be proud of our ancient origin, traditional as it may seem. It is singular to note that in the early stages we were decidedly specialists in medicine; we enjoyed a status quo undisputed. At present opinion is divided on this point, some claiming that we are specialists in medicine; some, including the majority of physicians, say that we have justly no right to such claim. We shall leave the point open for the present. The Greeks learned from the Egyptians, and from ancient Greece knowledge was diffused in many directions. Up to this time the prevention and medical treatment of caries prevailed. If we now can rely upon the museums for evidence, we find that surgical methods were employed, i. e., extraction of loose teeth, and just a little later during the height of Etruscan civilization, some attempts at restoration of lost teeth by bridgework. The Romans were evidently well instructed, as we find much evidence of dentistry such as instruments for the extracting and cleansing of teeth. With the beginning of the dark ages we also suffer with the rest, but it is a noteworthy fact that wherever any attempt was made to conserve knowledge dentistry was not neglected, and again when restoration by the Arabs set in about the eighth century, dentistry was not lost sight of. During the renaissance we find another proof of this, and it must be of great interest to us to know that as early as the twelfth century a book by a student of the University of Strassburg appeared dealing with dentistry alone.

However, as the mechanical necessities of our calling were made more and more manifest, we find that the medico-dental specialist begins to disappear and that those more specially gifted in a mechanical sense enter our ranks. It is well to pause here because it meant more in many ways than will be revealed by a mere passing mention. This departure began about the latter part of the 18th century, but still for nearly fifty years thereafter the medico-dental practitioner was active. However, finally the gulf was firmly established. The pros and cons of this situation interest us very much; we have lost something and we have gained something. The status quo of the physician has been pretty well defined for centuries. In fact it was the medical men who started the first university six or seven hundred years ago, and although the private medical school has domineered in many localities the university tradition is not so foreign to medicine as it is to dentistry; to get dentistry under university control is one of the future aims, and this departure referred to has not helped us any in this respect.

If this divergence was a detriment to some extent, nevertheless on the other hand we now see the beginning of modern dentistry a possibility, and as a result of this mechanical entrance we have, especially in America, a kind of dentistry which is the marvel of the world. This could not have occurred so quickly had the prescription writers and poultice makers of that time usurped the field, and we might even carry the speculation farther and say that we should not have been very far along had the conditions remained unaltered. But while we are enjoying this thrill of actual achievement, let us trace the development a little more critically, because we want to correct some things as soon as possible. There were no restrictions as to entrance in those days and no orderly or organized instruction was given; all kinds of men could practice dentistry. Our general literature as well as special teems with stories of the evil doings of the early nineteenth century dental mountebanks; too much ignorance in the ranks, and ignorance very often resorts to quackery. This is what we had going on side by side with the real earnest men of genius. Very few university men entered the ranks because of its low and unorganized status. All teaching was private and secrets were kept and guarded. About 1840 the first dental college was established in Baltimore. It was an independent institution established because the medical school refused to incorporate this teaching under its wing. Other schools of the same character began to spring up and soon the secret and laboratory instruction lost ground, although it still exists to some extent and perhaps we might say that this whole system of private school instruction is a modern extension of the old laboratory sale, with a wonderful commercial liberality and adjustment.

The most striking point in our history is the individual development of some men; they will always stand out as the very pillars of dentistry. They worked as hard to achieve ends as any of the great names in other pursuits and it is to them that we owe what we possess at present. Our time is too brief for a full mention of them and their accomplishments at this moment, but let it be known that we have nearly always kept apace with the general development of the age and that the public demands have been fairly well met.

This is true in regard to our ideal workers, the burden they had to bear was the ignorant followers as well as those who continually drag and oppose progress; we still have them. Perfect records of the work of these great men are wanting, because they found expression in the activity itself and not in the recording thereof, and if some of them could do this equally well they found difficulty with the publishers or dental press. However, enough remains for statistical purposes as well as for history if thoroughly collected and worked up even at this time. The greatest early benefit was the introduction of amalgam by two Frenchmen named Crawcour, and its subsequent perfection by Townsend and Flagg. The discovery of general anesthesia by Dr. Horace Wells, of Hartford, in 1844, must be referred to as one of the greatest advances made in modern medicine. It was on the 11th of December of that year that this dentist inhaled laughing gas and lost without pain a wisdom tooth. "On that day," writes Dr. McManus, "modern anesthesia was given to the world, and nitrous oxide gas proved to be a blessing to suffering humanity, and the forerunner of all anesthetics;" and the memorial tablet succinctly states that it was Wells who "discovered, demonstrated and practiced the benefits of anesthesia." In these days when there is some opposition to experimentation upon animals it may be worth while to refer again to the fact that Dr. Wells experimented upon himself, the greatest living animal. And we might also say that it is perhaps the most significant and valuable experiment that has ever been made. Dentistry then has made modern surgery possible; by annihilating pain, relieving apprehension and suffering progress has not been hampered. Again, a great many surgical instruments were invented by dentists, and if not, ideas and suggestions have given rise to the making of many of them.

Shortly after this we have another era: the introduction of cement as a filling material, without which we should still be very much behind in the full practice of crown and bridgework and in the treatment of caries. Now the cohesive property of gold foil which made contour and restoration possible was discovered, and operative dentistry accomplished wonders from then on. Then in the 80's the work of Dr. Miller (an American dentist in Berlin) attracts our attention in discovering the cause of caries. Dr. Black, already in the field, begins the publication of a series of scientific articles, and so we are practically down to the workers of the day which will take up our time for the next three years.

But why should we mention these great names and discoveries? It is because I want to demonstrate that nothing was accidental in these discoveries. They may appear so, but the aborigines of Africa are not discovering the bacteria that cause the caries of teeth. These progressive steps come about by the effort of men who are stimulated to work by being in universities, by contact with other workers, and by having numbers of interesting students around them all seeking the truth and further knowledge for the benefit of mankind. Furthermore, they were all *equipped with a good general education*, showing us the necessity for such studies as *chemistry* and *physics* and well organized departments and laboratories where work can be done.

And this brings us to a consideration of the second point, or the university, *which is a place* for the advanced and special education of youth who have been prepared for its freedom by the discipline of a lower school. The object of the university is to develop character, to make men. It misses its aim if it produces learned pedants, or simple artisans, or cunning sophists, or pretending practitioners. Its purport is not only to impart knowledge to the pupils, but also to whet the appetite, to exhibit methods, develop powers, strengthen judgment, and invigorate the intellectual and moral forces. It should prepare for society a class of students who will be wise, thoughtful, and progressive guides in whatever department of work or thought they may be engaged. It is therefore that a university should have under its control all technical instruction which is of such direct benefit to humanity as medicine, dentistry, chemistry, engineering, etc. They should be eliminated from bias of any kind, and this is usually accomplished by having them under the wing of the state or an *independent endowment*. Again, all work should go on independent of the income derived from students' fees, and this is seldom done excepting in the two aforesaid cases. The word ''university,'' as applied to a learned corporation, is several hundred years old, and in all times and lands has embodied the idea of the highest known agency for the education of youth and the promotion of knowledge. A little reflection will remind us of five great agencies by which modern Christian civilization is helped forward: *First, the family*, the unit of our social organization, recognized by Aristotle as the basis of society, and more recently as the very starting point of social morality. *Next, trade or commerce*, the exchange of one man's products for another's, the traffic between communities and nations. *Third, law and custom*, written and unwritten, the enforcement of duties and defense of rights, the equitable adjustment of conflicting claims. *Fourth, religion*, the acknowledgment of personal responsibility to an infinite and all controlling power. And the last to be named is knowledge, the recorded observations, and experience of our race in ancient and modern times, or in other words, *science*, in its broadest significance. The five influences, working in dwelling houses, market places, state houses, churches, libraries and schools, controls our modern life; and *that state of society* is the best in which domestic virtue, mercantile honor and the freedom of exchange, obedience to law, pure, undefiled religion, and the general diffusion of knowledge are the dominant characteristics. We are chiefly concerned, at present at least, with the last of these five factors.

The means by which our race has acquired knowledge and preserved its experience are manifold. The world is a laboratory in which man is busily experimenting. Ever since the primeval law ''subdue the earth'' was heard by primeval man, we have been observing, exploring, experimenting and reflecting. Experiments in social organization; war has taught its pitiful lessons; superstition, irreligion, vice and crime, as well as literature and art, law, religion and philosophy have all been teachers; customs, traditions, epics, creeds, codes, treaties, inscriptions, parchments, books, pyramids, temples, statues, museums, schools, pulpits, platforms, have all been employed to perpetuate and diffuse the knowledge which has been acquired; but ever since Europe emerged from the darkness of the middle ages, *universities* have been among the most potent of all agencies for the advancement and promulgation of learning. Their domain, the republic of letters, has been wider than any state; their citizens have not been restricted to any one vocabulary; their acquisitions have been hid in no crypt. They have gathered from all fields, and distributed to all men. Facts the most hidden, relations the most complex, have been sought out and studied, that, if possible, the laws which govern the world might be discovered and man made better. This has been and is the lofty mission of the university, and this is the institution which you are entering; you are not only to partake of its stores, but also to help in its greater aims. The great beauty of this institution is that it is the one thing upon which we can all agree; life is so short that we cannot afford to waste any force or energy in barren controversy. The university is the one place where such things are laid aside; it exists for the promotion of knowledge and to give personal instruction. It is by what is being done in these directions that a university is judged. Apropos, we might well ask some general questions in regard to the status of an institution which assumes this name. First, then, if it is a place of sound education. Are the youth who are trained within its walls honest lovers of the truth,—are they learned, are they trustworthy? Do they soon find a demand for their services? Do they rise in professional life? Do they acquit themselves with credit in the public service? Do they win repute among those who have added to the sum of human knowledge? Have they the power of enjoying literature, music and art? Can they apply the lessons of history to the problems of the day? Are they always eager to enlarge their knowledge? Do they become conservative members of society, Are they useful, courteous, *co-operative citizens in all the relations of life?* Do the charities, the churches, the schools, the public officers of the community receive their constant consideration? Are there frequent manifestations among the alumni of ability in science, literature, as well as the appearance of a large proportion of faithful and public-spirited men? To sum up all questions in one, is it proved to be a place for the development of manliness in every respect? It is the result we must weigh, the quality and not the quantity. Our university does this for the students who take advantage of what is here offered, but we cannot answer these questions satisfactorily yet when considered specially in connection with technical schools where the preliminary qualifications have been rather low for some time. It is the aim of the university to prepare all its students as the questions have indicated, and this will involve more academic training than is at present demanded in some technical schools. It can benefit the individual to this extent, and its second function is to benefit society. It renders services to the community which cannot be estimated in statistical terms, by the acquisition, conservation, refinement and distribution of knowledge: I have already said that it is the business of a university to advance knowledge; every professor must be a student. No love of ease, no dread of labor, no *fear of consequences*, no desire for wealth, will divert a band of well-chosen professors from uniting their forces in the prosecution of study. Rather, let me say, that there are heroes, martyrs and apostles of learning, as there are of religion. To the claims of duty, to the responsibilities of station, to the voices of enlightened conscience, such men respond, and they throw their hearts into their work with as much devotion and as little selfishness as it is possible for human nature to exhibit. By their labors, knowledge has been accumulated and intellectual capital has been acquired. They are animated by the firm belief that the advancement of knowledge in any direction contributes to the welfare of man. Research is not restricted to material things; the scholars of a university are equally interested in all that pertains to man; the growth of society, the study of language, and the establishment of the principles of intellectual and moral conduct. Universities are conservative: they encourage the study of history, the philosophy, the poetry, the drama, the politics, the religion,—or in other words, the experience of antecedent ages. Successors of the ancient monasteries, they keep alive in our day the knowledge of ancient languages and art, enrich the literature of our mother tongue, hold up to us the highest standards of excellence in writing, and enable us to share in the thoughts of the noblest of our race. When new manuscripts are discovered, or new versions proposed, or new monuments are unearthed, it is to the universities, where the knowledge of ancient and remote tongues has been cherished, that the religious world looks for enlightment and guidance. Their dominant influence is highly spiritualizing; I would even go farther, and say that it is truly religious. The influence of study is, on the whole, favorable to the growth of spiritual life, to the development of uprightness, unselfishness, and faith, or, in other words, it is opposed to epicureanism and materialism. In belief there are tides, as there are in the ocean, ebb and flow, flow and ebb; but the great ocean is there, with its deep mysteries, unchanging amid all superficial disturbances. Faith, with all its fluctuations, is as permanently operative in human thought as knowledge. Universities are decidedly refining in their influence upon the communities in which they are operative, and determine to a large extent the intellectual horizon which these localities enjoy. They are constantly engaged in eliminating human errors and in submitting all inherited possessions to those processes which remove the dross and bring out the gold. No truth which has once been discovered is allowed to perish, but the incrustations which cover it are removed. It is the universities which edit, interpret, translate, and reiterate the acquisitions of former generations in both literature and science. Their revelation of error is sometimes welcomed, but it is generally *opposed*, at least for a while; nevertheless, the process goes on, *indifferent alike to plaudits or reproaches.* If their lessons are hard to the beginners, they lead the persevering to high enjoyment. The universities distribute knowledge. The scholar does but half his duty who simply acquires knowledge. He must share his possession with others. This is done, in the first place, by the instruction of pupils. The process of acquiring seems to be promoted by that of imparting. The university should impart its acquisitions to the world by various channels so that all or the greatest number may be benefited; this is so important that a few illustrations are necessary to make it perfectly clear and applicable to ourselves: To increase our health and happiness is a most human object of a university; the study of the human body and the laws of life so we can live more rationally. It is done in the biological laboratories, and those who are devoted to research of this kind, revealing with their microscopes the structure and the life histories of the minutest organisms, are constantly, and in most unexpected ways, coming upon new illustrations of the plan of creation, which have an important bearing upon the welfare of man. They are the interpreters of nature and the benefactors of humanity; their work should be supported, because of its obvious relations to the health and happiness of every human being. In this connection I want to mention just one name, that of Metchnikoff, of the Pasteur Institute in Paris, who has very recently given us some important facts in regard to the causes of our short life, and has practically proven that human activity can be lengthened beyond the traditional three score and ten.

(To be continued)

SO far as scientific knowledge has yet gone it tends with constantly increasing emphasis to the belief that not merely the world of plants, but that of animals; not merely living things, but the whole fabric of the earth; not merely our planet, but the whole solar system; not merely our star and its satellites, but the millions of similar bodies which bear witness to the order which pervades boundless space and have endured through boundless time, are all working out their predestined course of evolution.—*Thomas Huxley.*

EDITORIAL

DENTAL RESEARCH LABORATORIES

THE ESTABLISHMENT of dental research laboratories has been talked about for years but nothing tangible has been done in this direction until recently. This spring a large endowment was given Washington University, St. Louis, Mo., and the Dental Department gets its share in the way of an endowed research laboratory in connection with the chair of pathology and therapeutics, and Dr. Hermann Prinz, who has filled the chair of dental pathology and therapeutics for the past ten years, has been chosen to take charge of the new laboratory and will devote his entire time to research work and teaching. The laboratory will be well equipped and in working order by October 1, 1910.

A few months ago the administrative board of Harvard University created a committee to establish a dental research laboratory in connection with Harvard dental school. The committee having this in charge is composed of the following well known men: Dr. H. Carlton Smith, Dr. Leroy M. Miner, Dr. Lawrence W. Baker, and Dr. George H. Wright, and already considerable research work has been done in the new laboratory.

We do not know just what provision was made in the Evans gift to establish a dental research laboratory in connection with the Evans Dental Museum and Institute now being erected in Philadelphia, in connection with the University of Pennsylvania, but it will probably include a research laboratory. Other of the university dental schools will undoubtedly provide for the establishment of research laboratories and soon we shall have these aids that the dental profession has long needed.

Of course, there has been individual research work done by a number of our recognized dentists, and the results have added materially to the progress of dentistry, but private research laboratory work is too expensive for any one man to carry on, and the establishment of research laboratories in connection with our best dental schools is more nearly what it should be.

In addition to this there should be a national laboratory properly endowed for dental research and the most competent man to be found should be placed in charge. It might be well for the profession to look into this matter and see if such a laboratory cannot be maintained under the provisions of some of the institutes already established or those projected. Of these we might mention the proposed Rockefeller Foundation; the Rockefeller Institute for Medical Research in New York City, or the Carnegie Institute recently erected in Washington, D. C., in the interests of scientific investigation, research and discovery for all mankind.

That there is great need of more dental research no one can truthfully deny. We are drifting toward preventive dentistry and there are many problems to be solved, for instance, the means of gaining control over dental caries; relation of pathological conditions of the mouth and teeth to the general nervous system; better means of controlling pain in dental operations; means of assisting nature in the full development of the jaws and facial bones with a consequent lessening of dental irregularities; the more scientific means of administering anesthetics; relation of pathological conditions of the mouth to general systemic conditions; a more extended study of secretions in the mouth; diet as a factor in health and disease; and many others.

There is plenty of research work for investigators to do and the establishment of research laboratories will afford an opportunity, and then the dental profession will not be behind the medical in this respect.

The good work should be encouraged for it means much to dentistry.

"A FILLER."

The postman has just arrived, R. F. D., but not P. D. Q., and brings a letter from the printers asking for an editorial to fill this space.

Did you ever hear of a more inopportune request?

Here I am in the country in August, seated on a rustic bench beneath two gigantic oaks. On either side the trees extend along the shore as far as my eyes can see. I hear a robin piping his song above me and the voices of many birds hidden in the trees.

Before me the lake spreads out like a huge mirror and toward the horizon the smoke from passing ships floats lazily over the water. Cumulus clouds are moving through the air carrying their grotesque figures into space, and sunlight and shadow pass in succession before me.

I hear the gleeful voices of children on the beach and my thoughts go back to childhood days with visions of a barefoot boy, the stately forest trees, the gurgling brook, the swimming pool and many other happy scenes of by-gone days.

All business cares are laid aside and for the time forgotten.

As I sit here in meditation I find myself filling my lungs to the utmost with the fresh cool air blowing gently from the lake and the trees are whispering secrets all about me.

I hear the cry of the white-winged gulls and see them flying o'er the lake now and then swooping down to catch a fish, or insect, from the surface.

And now I see a ripple on the water and to the right another. The white bass are again coming toward the shore and I am calling to my friend to bring the oars and fishing-rods and flies.

Who could write an editorial under such conditions? One may manage to grind out "a filler," but not an editorial.

PRACTICAL SUGGESTIONS

A USEFUL CROWN

By Allan G. Bennett, Minneapolis, Minn.

If the band or ferrule crown is confined to six or eight teeth, the six lower front and the upper laterals, it certainly has a most useful field, and is so essential as to hold its ground against all rivals. The lower roots can be left fairly long without displaying the gold, and can be fitted with no more pain than is experienced in preparing the average cavity.

But the ideal, the standard crown, for the six upper front teeth is the collar crown, invented nearly thirty years ago by Dean Litch, of the Pennsylvania College of Dental Surgery. The collar has almost all the advantages of a band, with none of its objections. It brings all the strain to bear on the root and not on the pin, and it does not irritate if properly adjusted. I mention this because it is the strongest and simplest yet suggested, and in order to give a very simple method of construction that has proved to be most satisfactory in my hands.

The first essential is a root with a slight palatal projection about a line below the gum, though some can be longer. In other words, trim the root off under the gum in front, sloping across the end so that the palatal portion has a projection on which to grip the collar.

The second essential is to scale carefully the enamel so as not to round the projection unduly, and extend this scaling about two-fifths around the root, and in some half-way around, according to the thickness or closeness of the teeth.

The third essential is to fit a piece of pure gold, No. 32 or 33 gauge, in the usual way on the end of the root, having an extension at the rear sufficient to inclose the projection and pass under the free edge of the gum. This extension is a little wider than the base on the root, is fan-shaped, and is divided up to the root with shears. Pass the pin, which should always be as long as the root will allow, and round, rigid, and of No. 14 or 15 gauge, and burnish the gold against the end of the root, and bend it up partially at the rear. Then remove and complete the bending and overlapping of the cut edges in the center. After annealing, return the gold to the root, readjust it on the end, and while this portion is held by a broad plugger in the hand of the assistant, carefully press the gold on all surfaces of the projection and up under the gum. The case is then ready for the impression, which should remove the gold and the pin intact, or draw them smoothly from the plaster and leave it unbroken. The pin, of course, should project about the length of the teeth, so that the plaster can hold it securely.

When the model is made and the tooth is ground, backed with pure gold, and waxed into place, the case is ready for investing, drying out, and soldering at one heat. Particular attention must be given to completing the collar, which should be soldered first. The smaller and narrower ones are completed simply by thickening with solder. Use 20-k., and after uniting the overlap place on a crescent-shaped piece and partially fuse this, completing the case with 18-k. so that the 20-k. cannot be re-melted. On all larger and broader collars place a crescent-shaped piece of crown gold, No. 32 gauge, and unite with 20-k. solder as before. Care must be taken to have enough thickness just where the base and collar meet, or this line may be too thin for strength or be worn through later.

Just here I will venture to repeat the hazardous statement already made, that no invention or improvement is ever likely to surpass the simplicity, ease of construction, strength and durability—in a word, the perfection—of this crown to meet the essential conditions that are present in every case of the six upper front teeth. And I will further say that I am confident that a fair trial with each requirement correctly complied with will convince the most skeptical.—*Dental Cosmos.*

ALYPIN AS AN ANESTHETIC

By B. Bennette, Edinburg.

Alypin the monohydrochloride of benzoyl 1-3 tetra methyldiamino 2 ethyl propylic alcohol, is not in any way related to cocain chemically.

Alypin is neutral and entirely compatible with the tissues and with the serums. It is very soluble in water. Applied to mucous membranes Alypin produces analgesia as rapidly as cocain. It may be used with the greatest advantage in all cases where cocain is employed. Experiments have recently been conducted to determine the relative toxicity of the two drugs. It was found that Alypin was slightly more toxic than cocain in the case of frogs, rabbits and mice, but the experiments, in the writer's opinion, did not go far enough. It cannot be argued that, because for these three types the lethal dose of Alypin is less than that of cocain, this will be true of human beings. Indeed, in the case of dogs and cats the lethal dose of Alypin is much greater than that of cocain, while it has been conclusively proved that in the case of man cocain is infinitely more toxic than Alypin.

Alypin is the only one of all the numerous substitutes for cocain which can be employed with every confidence, all the others having some drawback. Speaking from experience the writer can endorse all he has previously said in praise of Alypin, which in dental practice at any rate, has not a single objection, but on the contrary is full of virtues.

Action of Respiration.—Small doses of Alypin have no action, large doses cause the breathing to become slower and deeper, while a very large dose is sufficient to cause convulsions, quickens and deepens the breathing.

Action on the Circulatory System.—Therapeutic doses of Alypin have no ill effect on the heart. In warm-blooded animals Alypin is, if anything, a cardiac tonic, cocain being certainly more toxic in this direction. Alypin is a vaso dilator, its action as such being however confined to the vessels near the point of application, it does not influence the blood pressure (Schmidt).

Action on the Nervous System.—In intracranial injections Alypin produces much less excitability than cocain (Steinber).

To sum up, Alypin possesses the following advantages over cocain, from the dentist's point of view:

1. It is far less toxic.
2. It can be sterilized by boiling.
3. It causes no irritation at the point of injection.
4. Sloughing is unknown after its use.
5. It does not cause recurrent hemorrhage.
6. It is compatible with the tissues, and is not precipitated by the alkaline fluids of the body.
7. Its anesthetic effect is prompter, deeper and quite as lasting as that of cocain.

For the practitioner who employs local anesthetics, I can from my own experience give this advice. Throw away your cocain and all preparations containing it, even though it may say on the label that there is less than 1 per cent. present. The natural corollary is: Use Alypin.—*British Journal of Dental Science.*

TREATMENT OF ROOT CANALS

By A. D. Kyner, Moweagua, Ill.

Pulps in the distal roots of lower and lingual roots of upper molars can usually be removed and the canals reasonably well filled. By the use of finger drills and sulphuric acid the minute canals in the mesial roots of lower and buccal roots of upper molars are opened as far as possible, acid in the canals neutralized and roots dried, dry cotton wicks packed in the canals, and over these a wad of cotton saturated with a 5 or 10 per cent solution of formalin is placed to remain three or four days. The cotton wicks will draw the formalin to the point where you want its effect. It will do its work and disappear and the tissues will not be subjected to the prolonged effect of the gas with detrimental results. The cotton wicks are removed and replaced with dry asbestos fibre—sterilized by passing through alcohol or gas flame—and over this a sterilized asbestos disk soaked with a saturated solution of thymol in ol. cinnamon, covering same with tin foil and then cement, completing the filling with any material you prefer.—*Dental Review.*

NEWS and OPINIONS

INSPECTION IN SAGINAW SCHOOLS

PROMPT ACTION OF SAGINAW DENTISTS FOLLOWING LECTURES BY DR. JOHN W. DOWD, THE SUMMARY MISSIONARY OF GOOD HEALTH

Less than Twenty-five Perfect Mouths Found in Total Enrollment of Nearly 4,000 Pupils—The Necessity for the Campaign of Education Fully Demonstrated—An Interesting Communication.

By G. R. Treanor, D. D. S., Saginaw, Mich.

The movement for the inspection of Saginaw, E. S., public and parochial schools had its beginning on Sunday, May 8, 1910.

On that date John W. Dowd, L. L. D., lectured from three to five p. m., to parents and children, in the Saginaw Auditorium, on Oral and Dental Hygiene, under the auspices of Saginaw E. S., Board of Education and Auditorium Trustees, the lecture being preceded by an organ recital of thirty minutes. The large structure, containing four thousand seats, was filled to capacity.

Supt. E. C. Warriner, of East Side schools, introduced the speaker.

Dr. Dowd's talk was simple, yet productive, holding his listeners without interruption to the close, using lantern slides. His views were very easily understood by his audience, and his fine selection of simple terms was so well made the youngest child found no difficulty in following him.

Monday and Tuesday were devoted to lectures at schools, and Tuesday evening the local society met at the parlors of Hotel Vincent and Dr. Dowd selected as chairman of the evening. A nucleus was formed for the carrying out of dental inspection. The following committee was appointed to make arrangements: Doctors G. R. Treanor, R. P. Alden, M. W. Laphan.

May 18th a communication was sent to the School Board and the request for inspection granted. The local priests were also seen, and inspection allowed in parochial schools.

Tuesday, May 31st, our tour of inspection started, and ended Wednesday, June 22nd, taking to each school the same number of doctors as rooms in school, thereby finishing a school each day.

Arriving at 8:15 ready for inspection, at 8:30; a ten-minute talk on Oral Hygiene was given and then we made our examinations of thirty pupils, using the mirror only, in 30 to 45 minutes, using a sterilizing solution between inspections, furnished by Parke, Davis & Co.

The complete enrollment was 3,822 pupils; we inspected 3,280; not over 150 refused examination. Less than 25 perfect mouths were found. We found 13,375 cavities, making an average of four to each child.

SOME FACTS FOUND FROM THE INSPECTION

Children in the first, second, third and fourth grades we found in many instances, ignorant of such an article as the tooth brush, and upon reaching the higher grades cleanliness of the mouth is shown to a marked extent, positively showing that children upon becoming more enlightened have cleaner oral cavities.

Education and cleanliness along those lines go hand in hand, but we must particularly dwell upon the children at six, seven and eight years of age if we expect to produce results.

Of 3,280 pupils inspected 50 per cent. were found using the tooth brush, 87 per cent. required work at once, and in nearly every instance the sixth year molars were defective; 29 per cent. need regulating, and less than 25 per cent. had ever had work done.

In each school room at the time of the examination we found children suffering from toothache, and many with running abscesses. When questioned as to parents' or guardians' attitude toward such cases they would invariably tell examiner that parents would not allow them to be cared for. But the inspection has had its good effects; children are brought in close contact with us, and we find many children who were absolutely frightened by the expressions used by parents, brothers or sisters, who after the mirror examination, have gained such confidence that to visit us in the future will not be such a task, and now will readily submit to our operations. I would suggest that in order to keep on the good side of these little ones, just a little good common sense precautions be used on their first and second visits.

We must make a strong fight in one field, i. e., temporary teeth. People doubt us if we tell them of their great importance, and if we make a strong plea on that one factor our efforts will be well spent. Inspect the schools of your city, town or village; come closer to the children and parents; teach them the chief requisite of good health, and through our system of education we will maintain not only a healthier, but a better nation, because the personal health cannot be maintained in its highest degree without good teeth.

The large majority inspected were Americans, for that reason we made no record of nationality. Next came Germans, Irish, French, Italians, Scotch, Swedish, Norwegian, Hebrew, Greeks, Spaniards, English.

IMPRESS THESE FACTS UPON ALL

Without good teeth there can be no thorough MASTICATION.

Without good mastication there cannot be perfect DIGESTION.

Without perfect digestion there cannot be proper ASSIMILATION.

Without proper assimilation there cannot be NUTRITION.

Without nutrition there cannot be HEALTH.

Without health what is LIFE?

Hence the paramount importance of the teeth.

ASSOCIATION NEWS

Elections and Other Important Features of Recent Conventions

Ashland, Wis., July 13.—The following officers were elected by the Wisconsin Dentists' Association, which adjourned late Wednesday night; President, J. L. Maloney, Superior; secretary, R. E. Clausen, Milwaukee; treasurer, Rudolph Greettner, Milwaukee. Madison and Eau Claire were chosen for next year's conventions.

Everett, July 9.—Tacoma was chosen as next place of meeting by the Washington State Dental Society. Officers elected for the ensuing year were: Francis Atwell, Tacoma, president; Guy C. Canterbury, Aberdeen, vice president; F. F. Hergert, Seattle (re-elected), secretary. Executive council: J. W. Cloes, Tacoma; S. L. Moak, Montesano; Charles S. Irwin, Vancouver.

Winston-Salem, N. C., July 18.—One of the most important actions of the thirty-sixth annual meeting of the North Carolina Dental Society was adopted at the closing session, of a resolution heartily endorsing the proposition to establish in cities and towns of the state a free dental infirmary for the examination and treatment of the mouths of all school and factory children. The action of the dentists in this respect will have far-reaching effect. The importance of free dental infirmaries for the examination and treatment of school children was emphasized by the dentists at nearly every session of the society and it was expected some such action as the adoption of a strong resolution would be taken.

Milwaukee, July 19.—The establishment of a dental clinic for the free treatment of the teeth of school children is being planned by dentists of this city. The matter was recently brought before a joint meeting of the local dentists and the Milwaukee County Dental society.

No assistance has been asked of the city save that it appoint an examiner on the staff of Dr. G. P. Barth, medical inspector of schools, to work in harmony with the clinic. If the present plans can be carried out the committee in charge expects to have the clinic ready when the school term opens in September.

Asbury Park, N. J., July 22.—The New Jersey State Dental Society today elected the following officers:

President, Dr. W. F. Naylor, Somersville.

Vice president, Dr. W. W. Hawke, Flemington.

Secretary, Dr. Charles Meeker, Newark.

Treasurer, Dr. H. A. Hull, New Brunswick.

A protest against the use of cocaine in dentistry was made by Dr. Joseph Kussy, of Newark, in his report for the Committee on Materia Medica. The report of the State Board of Dentistry scored grand juries at New Brunswick and Paterson for not indicting illegal practitioners, who were prosecuted by the Board.

It was reported that, through the efforts of Dr. Luckey, of Paterson, Governor Fort was asked to use his influence in securing an appropriation from the State to conduct legal cases.

"While the governor promised to do this there was practically nothing done," the report stated.

Special attention was called by the Board to the fact that ethical and reputable practitioners are violating the law by engaging unregistered students in their offices. Dr. W. G. Schauffler, a medical man of Lakewood, asked for the co-operation of the dentists with the medical inspectors in the public schools. He told of New Jersey being the only State where a medical inspection of the school children is made obligatory by law.

Of 59 applicants who appeared before the State Board, 20 failed to pass.

Staunton, Va., Aug. 6.—The Virginia State Dental Association brought its convention to a close yesterday and will reassemble in Richmond, June 14th, 15th and 16th, next year. Fifty dollars was appropriated to the Miller memorial fund.

The officers elected were: Drs. F. W. Stiff, Richmond, president; W. H. Moseley, South Boston, first vice president; W. H. Ewald, of Norfolk, second vice president; A. L. Stratford, Richmond, third vice president; W. M. Sturges, Norfolk, treasurer; George F. Keeze, Richmond, for the forty-second time recording secretary, and M. B. Rudd, of Richmond, assistant; W. H. Pearson, Hampton, corresponding secretary. Executive Committee—C. T. Womack, W. A. Chusett, A. Hume Sprinkel, Staunton, and Benjamin Bloxton, Richmond.

Papers and discussions will appear in future issues of THE SUMMARY.

Halifax, N. S., July 25.—The Nova Scotia Dental Association met in annual session in Halifax.

The following officers were elected for the year: President, Dr. T. W. Wright, New Glasgow; first vice president, Dr. H. W. Burchell, North Sydney; second vice president, Dr. T. F. McDonald, Truro; secretary, Dr. R. E. MacDonald, Halifax. Dr. W. C. Oxner, Halifax, was made a member of the executive.

DEATHS

Dr. A. B. Saunders, Ithaca, N. Y., aged 28, committed suicide at his boarding place, July 21, by shooting. He left a note, making no explanation of his act, except that he was tired of living.

Dr. Joseph Levy, Boston, fell in his office, July 30, and was fatally injured by striking his head against his operating chair. He was but thirty years old.

Dr. John Bartlett, for forty years a practicing dentist in Chicago, died July 15, aged 81. In addition to his private practice, Dr. Bartlett was connected with various hospitals and colleges, and was the author of many medical and dental papers.

Dr. Beverly Sproule lost his life heroically at Campbelltown, N. B., which was entirely destroyed by fire July 13. The fire was the largest in New Brunswick since 1877, when the large part of St. Johns was destroyed. Dr. Sproule sacrificed his life in saving others. He had carried many women and children to safety in his automobile, and had just returned to a burning building for another load, when his gasoline tank exploded, burning him fatally. The total loss is estimated at two and a half millions. Campbelltown was the largest cedar-shingle center in the eastern part of the province. Five thousand people are homeless.

Dr. E. B. Loomis, 66 years of age, for the last thirty-five years a practicing dentist in Memphis, Tenn., died at his residence July 16, from heart trouble. For the last year his health has been declining and his death was not a surprise to his immediate friends and family.

Lieut-Col. E. B. Ibbotson, surgeon dentist, died at Montreal, June 17. He had occupied every rank from bugler to lieutenant-colonel.

Dr. Milton B. Straight, one of the oldest practicing dentists in New York State, was buried at Buffalo, June 28. He was born in Walworth, Wayne County, on May 23, 1838, and went to Buffalo when a youth. He was the son of the late Dr. Chester L. Straight. He studied dentistry in his father's office and later entered into partnership with the late Dr. A. P. Southwick. This business continued for several years, after which Dr. Straight opened an office of his own.

Dr. Erskine H. Dickey, a retired dentist and one time member of the Brooklyn Board of Education, died of apoplexy July 19, at his home in Brooklyn. He was born in 1841 and was a veteran of the civil war.

DR. SIMPSON, DEAN

Richmond, Va., July 29.—Dr. L. M. Cowardin, who for the last seventeen years has served the university as dean of the dental department, has resigned on account of his business engagements, which often necessitate his leaving the city. He will retain his professorship, however, and will thus serve the college as a teacher.

The faculty of the dental department elected Dr. Richard L. Simpson to succeed Dr. Cowardin as dean. Dr. Simpson, who came to Richmond from Fincastle, has been a member of the dental faculty of the institution for the last five years.

A DENTIST IN THE REVENUE DEPARTMENT

The recent appointment by the President of Dr. F. L. Marshall as collector of internal revenue for the third district of New York, has some features of interest. Dr. Marshall is reported to have practiced dentistry since 1888. There would not appear to be any special connection between the practice of dentistry and the collection of internal revenue, so that the appointment of Dr. Marshall cannot be ascribed to his professional success. It appears, however, that he is the Republican leader of the tenth assembly district. This occupation would, of itself, not necessarily fit him for the position, but is probably a reason for his appointment. His predecessor as internal revenue collector, Ferdinand Eidman, was also Dr. Marshall's predecessor as district leader. It might seem as if the collectorship of internal revenue for the third district of New York was an heirloom attached to the office of district leader of the tenth assembly district.

INJURED BY EXPLOSION

Medina, N. Y., June 22.—Dr. Thomas H. Agnew, a prominent dentist of this place, was painfully injured this afternoon by the explosion of a vulcanizer while working near the same in his office. Dr. Agnew was severely burned about the breast and arm and is suffering from shock. Physicians say, however, that he will recover in a week or ten days.

CRUSHED BY AUTO

Anderson, Ind.. July 28.—Dr. B. H. Reid, a well known dentist of this city, was dangerously injured when run over by his own automobile.

The machine stopped suddenly on the south side of the square, and, without throwing out the clutch, Dr. Reid went to the front of the machine and cranked it. When the engine started the machine lunged ahead at full speed, running over the owner. He suffered a broken leg, a broken collar bone and several fractured ribs.

THE LAW UPHELD

San Francisco, July 20.—The fight being waged by the state board of dental examiners against dentists practicing without a license was given further support yesterday when the appellate court sustained the sentence of the lower court, imposing a fine of $500 upon O. J. Fortch.

Fortch practiced at Twenty-first and Mission streets and was found guilty by a jury in Judge Lawlor's court March 3.

Fortch contended that the superior court had no jurisdiction in misdemeanor cases, but the appellate court declared that original jurisdiction in misdemeanor cases is granted the superior court as a result of the wording of the city charter, which limits the jurisdiction of the police court.

WANTS $20,000 DAMAGES

Lemont, Ill., Aug. 4.—John O'Brien, an undertaker, has decided that $20,000 will be needed to compensate him for the nervous shock which he experienced while seated in an operating chair at the "Boston Dental Parlors" in Chicago, and has brought suit for this sum, naming George Eisenbrand as the dentist who caused the unpleasant experience.

Mr. O'Brien says that he had no sooner been seated in the dental chair, than Eisenbrand injected some fluid into his, O'Brien's, gums and the patient immediately began to have spasms. The attack, he says, lasted for three hours, at the end of which time he was physically and nervously exhausted.

A particularly unpleasant part of the experience, Mr. O'Brien says, was the fact that, while he was under the influence of the opiate, he was not unconscious and could hear distinctly the plans made by the dentists for the disposition of his body, should he die in the attack.

"He hasn't a chance to live," he says he heard one of the employes say.

"Then what shall we do with his body?" another inquired.

Mr. O'Brien says that this style of conversation was continued throughout the three hours, or until the effect of the drug had passed and the patient was released from the chair.

FREE DENTAL HOSPITALS FOR SCOTLAND

Los Angeles, July 16.—The will of William T. Brown, of this city, who died while on a visit to Minnesota July 5, was filed for probate here today, and its principal bequest provides a fund of $100,000 to establish free dental parlors for the people of Musselburgh and other cities of Scotland.

Another bequest consisting of the proceeds of seven city lots in Prescott, Ariz., will be devoted to the benefit of the poor and infirm in that city.

Brown's estate amounted to about $125,000, and of this the widow, Mrs. Isabella Brown, who is now in Scotland, will receive $15,000.

MUST PAY FOR BROKEN ENGAGEMENTS

The Spokane, Wash., Dental Association at its meeting June 18, adopted the following resolution:

"Whereas, It is the custom for the dental profession in all large cities to charge for broken appointments; and,

"Whereas, The dental profession of this city has for years past suffered great financial loss because of broken engagements or unkept appointments by many of their patients; and,

"Whereas, The nature of the work of the dentist is most exacting, and statistics show the rate of mortality is greater in that than in any other profession; and,

"Whereas, Statistics show that the members of the dental profession are poorer paid for services rendered than any other like or similar profession (notwithstanding the opinion of the public to the contrary); therefore, be it

"Resolved, By this society (and the members thereof), That hereafter broken engagements or unkept appointments shall be charged for."

Forty-five Spokane dentists have each volunteered to devote a half day of their time every month to the free clinic for poor children which has been practically established with the aid of the city council and which will open in the early fall in suitable quarters at the city hall.

The last meeting of the Georgia State Board of Examiners was held at Atlanta, June 21. Fourteen of the twenty-six applicants failed.

ROBBERIES

Unprotected Dental Offices Continue to Afford a Fertile Field for Skilful Marauders.

Brockville, Ont., July 25.—Dr. Jackson's office was visited for the second time in a few weeks last night, and several electrical batteries and other articles taken.

Fargo, N. D., July 25.—The annual looting of Fargo dental offices came a little early this year, as these robberies in the past, of which there have been quite a number, have usually occurred later in the fall, generally about October 1. Saturday night or early Sunday morning the offices of Dr. F. A. Bricker in the Stern block and Dr. H. G. Green a little further up on Broadway, were entered and ransacked by thieves who looted both places. Dr. Bricker suffered the greater loss, for aside from having about $60 worth of gold stolen, his safe was pried open and several endorsed checks were removed, along with some currency lying in the till of the inner safe. Just how much was stolen has not been computed, but all told, Dr. Bricker's loss will amount to approximately $150.

Dr. Green was $20 loser, as his safe, though tampered with, was not entered, and all the thieves got from him was a till of worked-over gold in the laboratory. All the new gold and platinum was left untouched, which was quite a surprising feature of the robbery. There is no telling how the thieves forced their way into Dr. Bricker's office, but it is evident they made their entrance into Dr. Green's by way of the transom, which is an exceptionally large one.

Moline, Ill., July 22.—The office of Dr. H. A. Ziegler was entered last night and new gold and bridgework to the value of $75 was secured. No clue.

San Francisco, June 21.—Dr. Eugene M. Cooper's office was raided last night, and about $100 worth of goods stolen. No clue.

Edwardsville, Ill., July 13.—Dr. Elmer Byrne, a Granite City dentist, was robbed of materials valued at $100 last night.

Luverne, Minn., July 9.—Robbers entered the dental offices of H. W. Bertram and C. S. Palmer, unlocking the safes and helping themselves to about $140 worth of gold, $125 of the amount being taken from the office of the latter. The offices are in separate brick blocks. There is no evidence to indicate as to how entrance to the offices was secured.

Rock Island, Ill., July 14.—While Dr. F. C. Kuttler was banking his receipts yesterday afternoon, he had a visitor at his office who failed to leave a card. When he returned from the bank he discovered that gold filling valued at $100 had disappeared in his absence.

TWO SERVING SENTENCES

One at Grand Rapids and Another at Binghamton Will Render the Public Involuntary Service.

Readers of this column are invited to turn back to page 696, July SUMMARY, and read what was there printed concerning one "William R. Jenkins," particularly the correspondence with the

Superintendent of the Grand Rapids police. We are much pleased to append the second and concluding chapter in this interesting incident:

Grand Rapids, Mich., June 18.—In the superior court yesterday Judge Stuart sentenced William R. Jenkins, a much-wanted thief, to spend from two and one-half to five years in Jackson prison for robbing Dr. W. A. Dorland's dental office of supplies worth $112. The court promised the same sentence to all similar offenders in the future.

HERE'S ANOTHER

Binghamton, N. Y., June 20.—George B. Wright, who stole a quantity of dental supplies in the shape of gold crowns and other things from Dr. F. E. Smith, was sentenced by Justice George F. Lyon in supreme court this afternoon to an indeterminate sentence in the Elmira Reformatory. A few weeks ago Wright secured a key of Dr. Smith on the pretence that he wanted to do a little work on Sunday and when Monday arrived Dr. Smith found that both Wright and some of his dental supplies had vanished. After being arrested in Troy, Wright was brought to Binghamton, indicted for grand larceny in the second degree and sentenced today.

Martin Dewey, M. D., D. D. S., Kansas City, Mo., a firm friend of and valued contributor to the pages of THE DENTAL SUMMARY, announces his removal to 1016 Armour Boulevard.

Mr. William J. A. Bailey, who recently returned from a successful trip around the world representing a number of American manufacturers, is now preparing another business tour. He expects to leave this country early in the Fall and will be gone about a year, visiting the leading commercial centres of the world. Mr. Bailey markets his lines in conjunction with permanent sales offices in the different countries, so that this trip would no doubt be of interest to manufacturers seeking foreign trade. His address is 32 Broadway, New York City.

NEW YORK ALUMNI ASSOCIATION, XI PSI PHI FRATERNITY

The annual fall meeting and election of officers of the New York Alumni Association, Xi Psi Phi Fraternity will be held at Healy's, Columbus Avenue and 66th street, New York City, at 8 p. m. Wednesday, October 12th, 1910. Every Xi Psi Phi Alumnus residing in or about New York City is urged and expected to be present.

SOUTHERN ILLINOIS DENTAL SOCIETY

The Executive Committee of the Southern Illinois Dental Society is busy preparing a programme for the 25th Anniversary of the Society which will be celebrated in Chester, Illinois, Tuesday and Wednesday, October 25, 26, 1910.

A programme of the meeting will soon be ready for publication, all members of the dental profession in Southern and Central Illinois are requested to remember the date and so arrange that they may be in attendance, as the programme will be of such a character that none can afford to miss it.

ALGY F. STRANGE, *Sec.*,
Litchfield, Ill.

UPTON SINCLAIR ON THE MEAT TRAFFIC

The question of meat inspection, discussed from any standpoint, must all come back to the question of the millions of dollars that are at stake. To really condemn and destroy all the unfit meat would cost a fortune every month; and I personally feel quite certain that it will never be done until the time when cattle are killed, not for profit, but for use—in slaughter houses owned by the public, as they are at the present time abroad. And that of course can never be done until the public has broken the strangle hold of the "Interests" upon our government. We were thirteen years fighting for a pure food law—thanks to Cannon and Wadsworth and other faithful servants of the Poison Trust; and now the law has been turned into a farce. We have been generations fighting for a Postal Savings Bank, and now that we are about to get it, it is turned into a device to relieve the banks of some undesirable government bonds. John Wanamaker, when he was postmaster-general, said that there were four reasons why we could not have a parcels post; and he named the four express companies. We have not yet even got to the stage of agitation for government abattoirs, and so clearly it will be a long time before we are rid of the "Condemned Meat Industry."—*Physical Culture.*

In *The Delineator* for September "Conversazione," Mr. Erman J. Ridgway discusses work and play for women in a way that should make thousands think. With the whimsical humor that has won him readers everywhere he tells plain truths, which serve as texts for wise counsel that inspires loftier ideals and saner effort. The number also contains:

"Battle Hymn of Women," by Ella Wheeler Wilcox. Seven Times a Servant, by Anne Forsyth. The Danger Line in Patent Medicines, by Woods Hutchinson, M. D. And, as usual, is loaded with good things for the entire family.

AN OLD SONG REJUVENATED

I cannot wear the old hair
  I wore some months gone by.
I've laid it on the topmost shelf
  With many a weary sigh.
No longer are they wearing puffs,
  And rats are quite *de trop;*
I cannot wear the old hair—
  Oh, what a cruel blow!

I cannot wear the old hair
  For which good gold I paid.
Red hair is so expensive when
  One gets the proper shade.
I felt so dressed when it was coiffed,
  All little puffs and curls;
But I can't wear the old hair,
  Alas for Fashion's whirls!

I cannot wear the old hair.
  Four switches I must buy
And wind them round and round my head
  As flat as they will lie.
My face is far too plump for this,
  My nose is much too long;
But I can't wear the old hair.
  It's altogether wrong.

—*August Lippincott's.*

SAGAMORE HILL, THE POLITICIANS' MECCA

Time was when the newspapers believed they were indulging in good-humored fun if they referred to Sagamore Hill as in any way a notable spot in the United States. Yet there is no question but today it is at least as well known as Monticello, Hawarden, or Karlsruhe. Within the last nine years the owner of Sagamore Hill has become the greatest figure of the present generation and perhaps one of the greatest in history. It is no wonder, therefore, that the public manifests an interest in the little estate at Oyster Bay, in its owner, and in the daily life he leads there. And truly, the life which Theodore Roosevelt leads upon his hill is in itself so absolutely wholesome and so typically American that we cannot but envy it. It is a sane and healthy outdoor life, the kind most of us who are city-pent constantly yearn for. Quiet that life could easily be upon the sun-drenched hill, but politics, that exacting occupation of Mr. Roosevelt's, pursues him even here and now in his retirement, and breaks in upon his tranquillity. From "Roosevelt the Husbandman," by Henry James Forman, in the *American Review of Reviews* for August.

HE KNEW

"Look here," said one of the jurymen, after they had retired, "if I understand aright, the plaintiff doesn't ask damages for blighted affections or anything of that sort, but only wants to get back what he's spent on presents, pleasure trips, and so forth."

"That is so," agreed the foreman.

"Well, then, I vote we don't give him a penny," said the other hastily. "If all the fun he had with that girl didn't cover the amount he expended, it must be his own fault. Gentlemen, I courted that girl once myself."—*The Housekeeper.*

Great care should be taken in the selection of literature for children. Judging by the enormous circulation claimed by many of the children's magazines of the poorer and less worthy class, this fact is not fully realized by parents and guardians. It is an unquestioned fact that the early reading of children has much to do with the development of character. St. Nicholas (The Century Co., N. Y.), leaves nothing to be desired in this respect. It is full of a variety of good material for mind and character building, and should be a regular visitor in every home.

A GOOD REASON FOR INSURGENCY

In an announcement of an important series of articles upon the subject by that pre-eminent authority, Miss Ida M. Tarbell, and which are to begin shortly in the *American Magazine*, the editor of that periodical says in its September issue:

"The popular judgment of the Payne-Aldrich Tariff Bill grows more severe with each passing month. Instead of quieting the tariff question, it has made it more restive. Instead of reassuring business, it has dealt it one of the heaviest blows in years. All of which is logical enough. It is a bogus revision, and every man of sense knows that we will get no permanent settlement of this matter until a genuine, searching, informed revision has been made. He knows that by shirking this duty the Taft Administration has lost the country years of time. Here is the real basis of the anti-Taft sentiment—the good reason for insurgency."

Dr. Truman W. Brophy is writing a book on Oral Surgery, which P. Blakiston's Son & Company of Philadelphia, will publish in the fall.

EDUCATE THE PEOPLE

TO OUR READERS—Cut out any of the items printed under this heading, take them to your local newspaper and have them printed as news matter.

ONE STOMACH AGAINST FOUR

The case for the baby has seldom been more concisely put than in a recent address by Dr. George W. Goler, health officer of Rochester, N. Y.

"When a little child is born into the world it ought not to find waiting at the threshold a foul disease that will rob it of its sight. Deprived of its mother's milk with its one little stomach it has to labor hard to digest the milk intended for a big calf baby with four stomachs, even if that milk is free from manure and filth, and as it grows it is overshadowed by the awful menace of the infectious diseases of childhood, by adenoids, tonsilar enlargement and tooth decay.

"Adenoid growths and tonsils, both large and small, together with the infectious diseases of childhood, are responsible for most of the early tooth decay, for the low stature and weight for age, often amounting to as much as eight per cent. at the age of fourteen; for the lop-sided ears, red eyelids, and assymetrical maldevelopment of the face.

"We have prevented many of the hunchbacks, club feet, knock knees, the smallpox and syphilis in the young, even some of the scrofulous scars, but we still have striking physical deformities in the stunted bodies and irregular faces of our children. Among the most evident of these deformities is that produced by tooth decay, and it is first to the relief, and thus to the prevention, of this condition that we must now address our efforts, trusting that in the time to come we may so broadly teach the lessons of child hygiene, and we may have such active public support for them that the time will soon arrive when all children will be of robust body, average stature, and having early been relieved of their adenoids and tonsils, having escaped the so-called infectious diseases of childhood, they will, as a result of the care of the physician and the dentist present in their mouths regular and unfilled sets of teeth. When this time arrives, and come it will, the presence of a prominent filling, or a gold crown in the mouth of a child will be a sign to all men that neither the state nor the parent has yet learned the lesson and the value of child hygiene."

MIND YOUR TEETH

The Value of Keeping the Mouth and Gums Perfectly Clean

A man is known by the teeth he keeps. The worst thing that can happen to our teeth is for them not to have enough to do. It is the worst thing that can happen to us also. Spiritualized and cultured as we have become, we still fight the battle of life with our teeth, though we no longer chew our enemies' ears or throats. Bone cored, enamel coated and rock-ribbed as the hills, our teeth are more absolutely under our control than almost any other structure of the body. Neglect them and they decay at once. Give them proper attention and they will go on repairing themselves for forty, fifty, sixty years.

Give children plenty of roughening food to chew, and they will get the pearly vigor of the savage tooth with the endurance of the Caucasian's. Above all, the food should be of such a character as to give exercise and massage to the gums. Part of this can be given by plenty of coarse food in addition to real food—not as a substitute for it—and part by intentional and vigorous friction with the toothbrush. To brush the gums well is half the value of brushing the teeth.

Keep the mouth and gums strictly clean, and the teeth will take care of themselves. There are thirty-three distinct named and labeled sorts of bacilli or bugs in our mouths as normal parlor boarders, but they'll behave with perfect propriety unless you give them carrion to get drunk on.—*Dr. Woods Hutchinson in Survey.*

The decision of the Atlanta dentists to conduct free clinics among the pupils of the public schools during the school term calls attention anew to the large share of the world's thought that the welfare of the child is at present receiving.

The dentists purpose to visit the schools of the city, each to give a portion of his time without compensation, and examine the teeth of the pupils and perform such dental operations as may be needed.

The act of the dentists is one of large-hearted generosity, and in conformity with the traditions of a great profession, and with the spirit of the times. In co-operation with the board of education their services will no doubt be productive of vast good.

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX OCTOBER, 1910 No. 10

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society
and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. Bethel, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple
St. Louis	Dr. E. E. Haverstick, Boyle and Maryland
Kansas City	Dr. Martin Dewey, Argyle Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe St.
Los Angeles	Dr. B. Frank Gray, Security Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Buffalo	Dr. J. Wright Beach
Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Louisville	Dr. H. B. Tileston, Equitable Bldg.
Memphis	Dr. D. M. Cattell
Atlanta	Dr. Thos. P. Hinman, 4th. Nat. Bank Bldg.
N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Richmond	Dr. F. W. Stiff, 600 E. Grace St.
New York City	Dr. W. H. Sieberst, 1 W. 34th St.

Yearly Subscription, $1 00 in U. S. Canada $1.40.
Foreign, U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

SYPHILIS OF THE MOUTH

By S. L. McCurdy, M. D., Pittsburgh, Pa.

Professor of Oral Surgery, Dental Department, University of W. Pa., Pittsburgh, Chairman of Section of Stomatology American Medical Association.

THERE is probably no other constitutional disease with mouth lesions that should be so thoroughly understood by the dentist as syphilis. This disease produces lesions so varied in appearance that a most systematic classification and a lucid description is of great importance.

The *Initial Lesion* may result from infection of the mouth from other mouths, as, in kissing, from eating and drinking utensils, from physician's tongue depressor, dental instruments, cigars, pipes and other innumerable ways. It begins as an elevated and hardened papule, the center in the course of a few days breaks down into an ulcer with a uniform margin. The indurated area surrounding the ulcer enlarges. It may be on the tip of the tongue, lip, cheek, alveolus or any point where contact has occurred. When on the cheek it may be a chancre or an eroded papule and rarely it appears as a superficial ulcer or ecthymic pustule. There is usually infiltration of the surrounding soft tissues. The glands of the neck are usually involved quite early. The hard chancre is the variety usually found on the tongue, on the tip, surface or margin. The induration is from the size of a pea to a nickel, has a well defined border, is bright red with a depression in the center which either breaks down into an ulcer or becomes covered with a crust. Before the formation of the induration, there is nothing to distinguish it from a superficial glossitis from whatever cause. As in disease of the lip the glands become indurate in a short time. The initial lesion will disappear without treatment in the course of several weeks.

Secondary manifestations are the same in sequence as those of the skin. The macula, papule and pustule appearing in order, or any form may occur without the other. They are simultaneous with the skin lesion usually and hence are not difficult to diagnose.

The characteristic coloring found on the skin is not found on the mucous membranes, but they are a brighter hue and may be very red.

The *Erythematous Eruptions* appear in bright red patches with irregular or illy defined borders and are located over the fauces, soft palate, sides of the tongue and cheek. They are not so persistent as later lesions but may continue for several months. They yield rapidly to treatment.

Mucous Plaques or Patches are the most common mouth lesion. They are caused by cellular infiltration of the mucous membrane slightly elevated and covered with a grayish white erudate or false membrane. When it exfoliates there is left a red area known as *papuloerasive plaque*. They are sensitive but not painful. There is no induration as is found in chancre. They are not accompanied by an inflammatory zone.

Differential diagnosis must be made from canker sores and other aphthous ulcerations, which usually have an inflammatory zone and constitutional symptoms.

The *Papular Syphilide* develop as later mucous lesions of secondary syphilis. They vary from an eighth to half an inch in size. The surface presents hypertrophied epithelium, which becomes macerated and takes on a pale gray color. When this is thrown off a superficial ulcer remains. These changes may extend over a year or more. The repaired patch leaves a permanent grayish white scar, characteristic of syphilis. When papules are found in the angle of the mouth they are grayish in the mucous membrane and copper colored when they extend into the skin. When on the tongue they are darker in color and have a mirror-like smoothness called by Fournier, "plaque lisse," which may disappear under treatment and again recur during a few years following the initial lesion. It may persist and become the papulohypertrophic type.

Syphilitic Gumma of the tongue and mucous membrane of the mouth are manifest in two forms:

(A) Superficial circumscribed gumma.

(B) Gummatous infiltrations.

(A) The *superficial gumma* form a distinct protuberance, usually in the anterior third of the tongue. They may be in the mucous, submucous or muscular tissue. They vary in size from a bean to a walnut. There may be several. The surface is at first covered with smooth mucosa but breaks down in the center and emits a dirty yellow mucilaginous discharge containing lumps. The center covering breaks away leaving a granular ulcer. They are usually in the horizontal plane and involve one side. When multiple they may develop on both sides simultaneously and the tongue may part in the median line leaving a bifid condition or the double tongue of syphilis. Destruction continues unless arrested by treatment.

(B) *Infiltration gummata* more frequently involve the cheek, beginning at the angle of the mouth and extending backward resulting in the characteristic serpigenous ulcer and eventually perforating the cheek. Other parts of the body are usually involved at the same time, as, the bones and viscera. The soft and hard palate are frequently the seats of gummatous infiltration. Destructive lesions usually appear first in the nasal cavity or pharynx, the ulceration extending to and destroying the palate, as the two reported cases demonstrate.

A differential diagnosis must be made from initial lesion where it is single and without other symptoms or lesions. From lucoplakia which is local and more diffused and not nodular, from actinomycosis which is rare and without a syphilitic history and the lesion is more irregular and nodular, from tuberculosis which is most frequent upon the tip of the tongue, beginning on the surface as a small tubercle eventually becoming ulcerative. The borders are irregular and not elevated.

In epithelioma the development extends over years without constitutional symptoms. The surface is usually warty and white.

Since the care of the mouth is of special importance to the dentist, the following may be quoted with profit: "Drennen has been in the habit of urging every syphilitic to consult a dentist, and that after every meal it is necessary to brush his teeth carefully. If bleeding results, so much the better; it relieves the engorgement. If the gums are tender and have a tendency to bleed early, he relieves it by applying alcohol once daily. If the local application of cocaine is necessary for this it should be used. Ptyalism may nevertheless result from the necessary mercurial treatment, but if the patient, when finished with brushing the teeth, will take his finger and thumb and carry out a systematic massage of the gums for several minutes, not less than half a dozen times a day or oftener, there need be no fear of ptyalism. During the seven years while giving ungt. hydrarg. in doses ranging from half a dram to two-thirds of an ounce daily, externally, sometimes for weeks at a time, not a single well developed case of ptyalism has come under his observation."

SYPHILITIC DISEASES OF THE FACIAL BONES

(A) Acquired Syphilitic Bone Disease.

(B) Hereditary Syphilitic Bone Disease.

(A) Syphilitic destruction of the bones of the face runs a chronic course and is rarely confounded with the acute varieties of necrosis. It is only possible, however, to differentiate these destructions from periostitis and osteomyelitis during the stage of sequestration by taking into account the history of the disease and the personal history of the patient. The patient who has had a chancre will generally withhold the fact and many will positively deny such a history when questioned directly.

Symptoms of most importance are gradual development without acute pain, as a rule, but an ache during the night. Swelling is gradual. Thickening of the soft tissues is marked. When the wound becomes suppurative, showing mixed infection, the development is more rapid and pain and septic symptoms more exaggerated.

Diagnosis must be made from other destructive diseases as periostitis and osteomyeletis, from streptococcic, staphylococcic, tubercular and chemical origin. Here the history of the disease is valuable. The gradual onset, night pain, with moderate swelling, are most prominent diagnostic points.

Treatment is constitutional. In no case should the knife be used except to remove sequestra or liberate an active mixed suppuration. In both acquired and congenital diseases, Iodide of Potash in some form is as near a specific as any medicine known. The saturated solution of the crystals is doubtless the best form. In a solution of one ounce of the crystals to an ounce of distilled water, a drop represents a grain of the drug. An adult should begin on five drops three times a day, after meals, in milk or water. Increase one drop every day up to tolerance. If increased in this way 100 grains have been given at a dose without injurious effect. Syphilitics have a tolerance for iodides. People who have not had the disease cannot take such large doses. Iodide of potash is a gastric irritant unless given with liquids after meals.

(B) That heredity plays a most important part in the production of bone disease of the face of children there can be no doubt. Indeed the great majority of cases under twenty have a syphilitic ancestry.

Surgeons who see many cases of bone disease of young people, learn to recognize this factor as a cause of hip, knee, spinal and other bone and joint destruction and accordingly place these patients on constitutional treatment from the beginning. The claim has been made that at least half of all children suffering with so-called tubercular bone disease have a syphilitic parentage, and, the half of the adults suffering with bone and joint disease have had syphilis or gonorrhea. If this statement be anywhere near true, no case should pass without considering venery as a causative factor.

History is not always to be obtained. Indeed there are few fathers of a child suffering with bone disease who will make a confession. Such an admission, however, is not necessary since the course is characteristic.

Symptoms develop more slowly than in acute infections. Pain is not so severe and more prominent at night, and characterized as a dead ache rather than an acute and lancinating. Swelling develops slowly. Pus formation is dependent upon mixed infection. When in the mouth saprophytic infection produces a most foul and putrescent condition.

Constitutional symptoms are very mild or entirely absent. When present they are due to toxemia from other than syphilitic infections.

Differential Diagnosis. It is not uncommon for such cases to start as an acute infection in a child with hereditary syphilis. Here both factors must be taken into account and a differentiation made. Tuberculosis, diseases from arsenic and acute fevers must be excluded.

Treatment of syphilitic bone diseases is entirely constitutional. It it only when an abscess is to be incised or a piece of dead bone removed, that the knife should be used. To cut is to further destroy a tissue that if treated constitutionally would melt away by absorption. The treatment consists in the administration of Iodide of potash and mercury, in some form. The Iodides are best given to children in the Syrup of Iodide of Iron. Here we have the Iodide as an alterative and the iron as a tonic and blood builder. In many cases patients do not tolerate this form well and some other must be given. A saturated solution as heretofore directed may be tried. Some cases do not improve as they should and mercury in some form is administered with beneficial results. Mercurial injections is a favorite method of administration with many syphilographers. Experience alone lends wisdom to the practitioner.

Operations are necessary for the removal of detached sequestra or portions of bone unquestionably dead and when such removal will prevent further and deepened extensions of destructions.

Two typical cases are appended to further illustrate the foregoing facts.

Fig. 1, a girl aged eight years, was seen with the entire alveolar process on the lower left side exposed half way down the sides of the body. A syphilitic parentage was unquestionable. It was first decided to place the patient on constitutional treatment for two weeks. At the end of this time, under general anesthetic, that portion of bone which was dead was chiselled away. This included all of the deciduous teeth on the left side, the follicles of several of the second teeth, and some small pieces of bone were cast off during the following two months. In the course of three months the remaining body of bone had been entirely covered. The patient was continued upon constitutional treatment for four months, when she ceased to return for treatment. Several months after this she returned with a gumma, the size of the first joint of an adult thumb, over the old area of the disease. Constitutional treatment was reinstituted and the lump disappeared in three or four months without exfoliation or operation. If constitutional treatment had been continued long enough in the first instance, the relapse would not have occurred. The form of treatment was Syrup of Trifolum Compound (McDade Formula) with occasional courses of mercury.

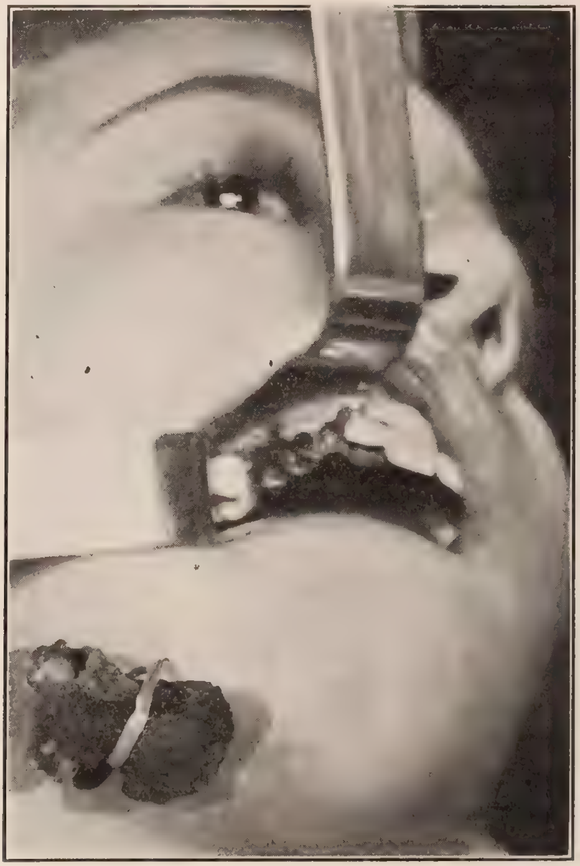


Fig. 1.

Another girl, aged six years, had diffused syphilitic periostitis of the tibia, which required the removal of a sequestrum after which recovery followed the usual treatment. This patient returned in several years with complete destruction of the hard and soft palate, septum and part of the nasal frame. Many more of such cases might be reported but the foregoing are typical of the class.

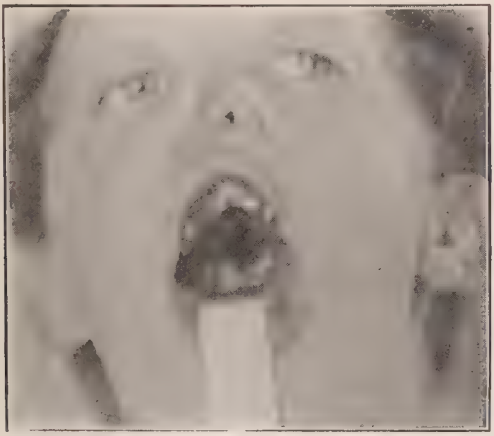


Fig. 2—Acquired cleft palate with destruction of the nasal bones and cartilage, in a case of hereditary syphilis.

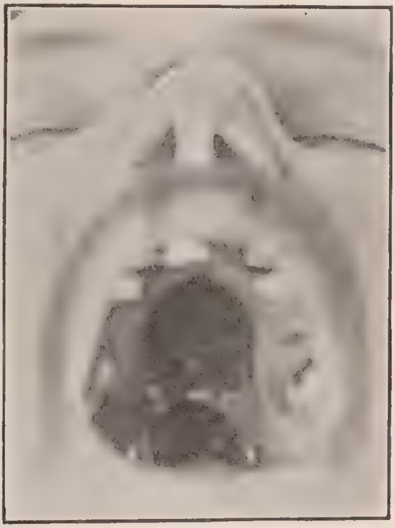


Fig. 3.

When this case was first seen the nasal bones, the nasal process of the maxilla, the nasal septum and the floor of both nasal cavities were gone. The hard and soft palate were also destroyed as well as the faucial walls. The destruction was extending in every direction. Constitutional treatment stopped the progress, and barring the deformity of the nose and absence of the roof of the mouth, the patient enjoyed good health. A return may be expected in such cases unless the iodides are continued for a year or two, and the patient kept under observation for several years.

H. M., aged 29 years, had a chancre eight years ago without usual history and no tertiary symptoms until two years ago, when he had beginning destructive disease of the nasal bones and roof of the mouth. (Fig. 3.) In spite of what it is reasonable to suppose was good treatment, the destruction continued and would, no doubt, have destroyed the entire maxilla.

Iodide of potash was pushed to sixty grains three times daily. The destruction ceased and repair on the ulcerative surfaces was complete in one year. The case presented a most extensive destruction. The bones in the roof of the nasal cavity were so destroyed as to freely expose the base of the skull. The ethmoid cells were destroyed well up to the cribriform plate. At no time, however, were there any cerebral symptoms. A vulcanite prosthetic appliance attached to a set of teeth, enabled the patient to talk well.

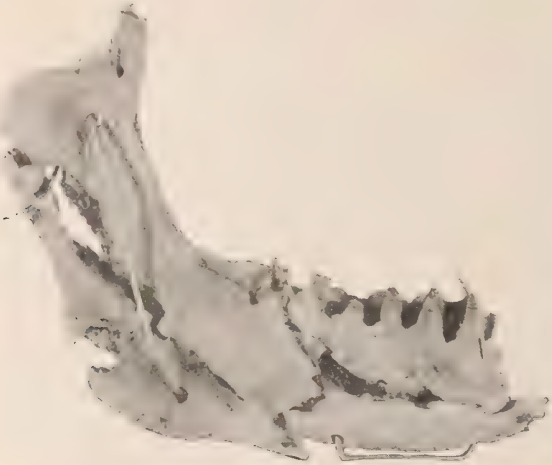


Fig. 4.

H. H., male, aged thirty, presented himself with a mouth converted into a pus basin. This putrescent condition had existed for many months. He had had a chancre four years before, but this history had apparently been overlooked, for specific medication had not been administered. An examination revealed a denuded left mandible from symphysis to condyle.

Operation. There was nothing to be done but to operate. The first step required the removal of the entire left body. It was with some difficulty that the tissues were dissected back from the bone so as to permit its removal. Owing to the advanced process of decay the body was broken in three pieces. The angle and ramus were found also to be detached, but were included in the tissues, so that they could not be removed until a dissection was made from the position of the last molar upward, toward the coronoid process. This was done through the mouth with a pair of Cryer upper universal tooth forceps; the ramus was removed with great difficulty, the bone coming away in two fragments. It included the entire body, with the ramus coronoid process, sigmoid notch and the neck of the condyle, the condyle alone remaining on the left side. The portion of the symphysis not included in the specimen had disintegrated and was removed by curettement.

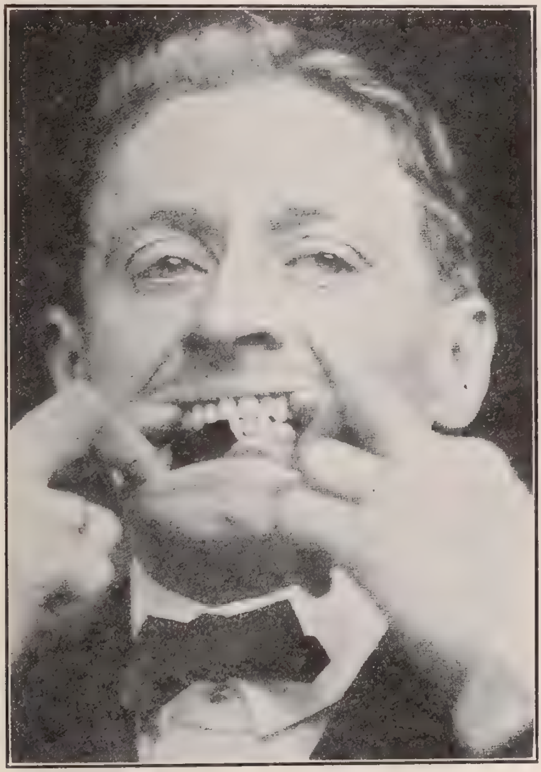


Fig. 5.

Results. Hemorrhage was extensive but this was controlled by packing, which was allowed to remain for forty-eight hours. Careful packing was required for several weeks, so as to keep the remaining half of the bone as near a normal position as possible until reproduction of new bone had so far advanced as to bridge the chasm from the remaining condyle to the symphysis. The ultimate result may be seen by studying Fig. 5. Articulation between the teeth in the remaining half of the mandible and those in the corresponding maxilla is as near perfect as possible. The wound itself repaired without incident under specific medication.

This case illustrates that many extensive incisions are made through the tissues of the face for operations on the mandible and bones of the face that could be done through the mouth. Fig. 6 shows that no deformity of the face is present either from unnecessary incisions through the face or loss of bone.

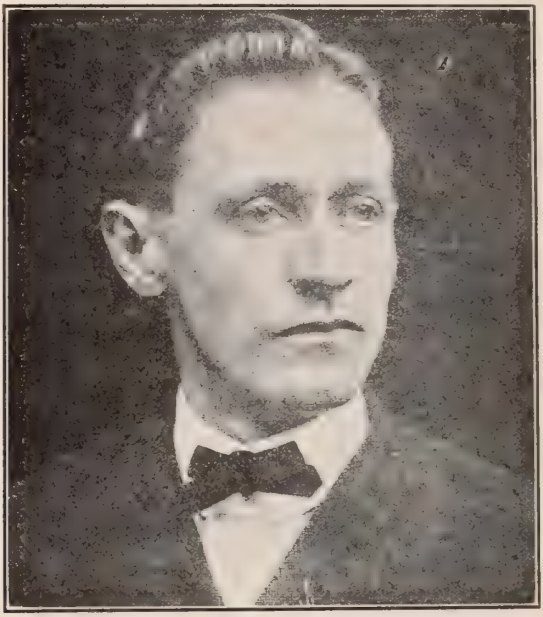


Fig. 6.

Fig. 7. G. W., aged 40 years, had a history of chancre eight years before the beginning of his present trouble, with an intermission of perfect health. The exciting cause of the present trouble was a suppurative peridentitis.

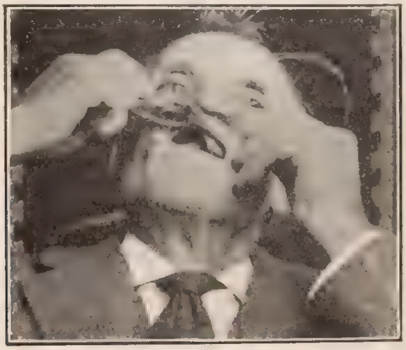


Fig. 7.

Operation. I examined him and decided on an operation the following day. After carefully dissecting back the flaps of soft tissue, including the periosteum, requiring incisions in two or three directions, the left maxilla was removed. This included the antrum and lateral nasal wall. Further curettements removed fragments representing practically the entire right bone below the floor of the orbit, making the cavity formerly occupied by the right maxilla continuous with the right nasal cavity and the mouth. The hemorrhage was quite extensive, but was controlled with gauze packing.

Results. Under specific medication the wound entirely healed in three months. Packing was necessary all this time, and took the place of the roof of the mouth so well that there was little defect of speech; indeed, so little that his family never knew he had undergone an operation. The operation was done through the mouth. The patient left the hospital on the fourth day. An artificial denture restored the voice perfectly, and, but for the nasal secretions falling into the mouth, he suffers no inconvenience. Medication was continued for one year. Fig. 7 shows this case after complete recovery.

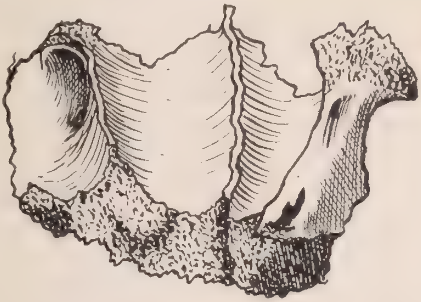


Fig. 8—Bone removed in case shown in Fig. 7.

Regarding inoculation: There is great danger in two ways: First, that the dentist may become inoculated, especially during the extraction of teeth by abrading the finger and absorption resulting. The writer has seen four cases of this sort in dentists, and in all of these cases the abrasions occurred during tooth extractions and in none of them was the dentist aware that the patient had a specific disease. Probably six per cent. of physicians become inoculated from their patients some time during their professional career.

To avoid inoculation, the dentist should use a heavy finger stall on the index finger at all times while he is extracting. This should be followed by a thorough cleansing of the fingers by holding them in pure alcohol for a minute or two.

Second, danger comes from the dentists inoculating their patients with infected instruments. This method of inoculation, I am sure, is not frequent, yet it no doubt occurs and the only way to avoid it is for the dentist to sterilize his instruments both before and after all operations. It is a difficult thing for one who has not been thoroughly trained in modern methods of antiseptic surgery or has had no experience in modern surgical operations to learn all of the details and to be able to practice thorough cleanliness. A student in college should be thoroughly drilled in modern antiseptics and asepsis.

ORAL LESIONS OF SYPHILIS.*

By George A. Holliday, M. D., Pittsburgh, Pa.

IN THE curriculum of the student of dentistry there is usually included a short course of lectures on the venereal diseases. The subject of syphilis is of particular interest on account of the oral defects resulting from its destructive lesions. Prosthetic dentistry includes the art of correction of these defects by mechanical contrivances, but this phase of the subject will not be discussed.

In the histories of infection with syphilis many an individual, after the disappearance of the primary lesion and secondary cutaneous eruption, suffers from no further manifestations of the disease except those lesions appearing in the mouth. The diagnosis may depend very largely upon these manifestations and the efficiency of the treatment administered is not infrequently to be judged by an inspection of the oral cavity. The recognition of such lesions is a matter of importance to the dental surgeon that he may protect himself against accidental infection and accrues to the advantage of the patient in the selection of appropriate treatment.

Recent investigations have proven that the causative micro-organism of syphilis is the spirochaeta pallida, visible under high magnification by the microscope as a delicate spiral thread. The presence of this organism in the lesions and the secretions therefrom accounts for their contagiousness. It is found in the largest numbers in those lesions of syphilis known clinically to be the chief sources of infection—the initial lesion and the mucous patch—but has been demonstrated also in the lesions developing years after the original infection which heretofore were deemed innocuous, but that we must now recognize as possible sources of the contagion.

In the "acquired" form of syphilis the first manifestation of the infection is the appearance at the point of inoculation of the primary lesion or chancre. If the point of inoculation is the lips or mucous membrane of the oral cavity the chancre will develop at that location. Of much greater interest, however, are the oral manifestations of the secondary stage—the mucous patches—because of the frequency of their occurrence, their recurrence over an extended period, and their marked virulence. The late gummatous lesions, though they may interfere markedly with the functions of the parts and be productive of much deformity, are clinically of only slight virulence. The majority of infections with syphilis are acquired through the contagion of the mucous patch. The blood of a syphilitic contains the virus and successful inoculations have been made with it. The saliva is contaminated with the infectious secretion from the lesions of the mouth.

---

*Read before Odontological Society of Western Pennsylvania, Oct. 12th, 1909.

While the major portion of those suffering from acquired syphilis are genitally infected during illicit relations, there are many infections innocently acquired. The initial lesion may be located on any portion of the body exposed to contact with the syphilitic virus. When it appears elsewhere than on or about the genitalia the infection is spoken of as extragenital, and the dental surgeon who has not familiarized himself with the oral lesions of the disease is especially liable to such innocently acquired infection.

The chancre does not develop at once, but a period of incubation averaging 21 days (10 to 40 days) elapses before it makes its appearance. The commonest form of the chancre is an erosion in which there is an exfoliation of the epidermis exposing but not destroying the true skin. Its surface is polished, eroded, or raw-looking and its central portion may be covered by a gray false membrane. A dusty red areola surrounds the eroded surface. The lesion may be level with the surrounding surface or slightly elevated. Its center may be depressed if slight ulceration is present. The discharge from the surface is small in amount, thin, serous, or sero-purulent and may be blood-stained. Three-fourths of all genital chancres are of this form. Such a primary lesion is not an ulceration involving any considerable destruction of surface tissues. The second form of chancre, in point of frequency, is the chancrous ulceration (or Hunterian chancre). In this form there is deeper ulceration—more loss of surface tissues—than in the erosion and a crater-like or funnel-shaped excavation with hard prominent border and sloping edge is developed. A third form, the indurated papule, is an infrequent lesion. It may be large and prominent or so small as to escape the patient's notice. The skin over such a lesion is not broken; the surface is dry but frequently crusted with layers of exfoliated epithelium. Such a papule is of a brownish-red color, and sharply defined from the surrounding tissues. The multiple herpetiform chancre, the silvery spot and the mixed sore (from contamination with chancroidal virus) are other infrequent forms.

A characteristic feature of the chancre is its induration. This consists of a sharply circumscribed hardening in the tissues beneath the lesion and spreading wide of its margin. It is best detected by pinching with the fingers placed wide of the margins of the sore. It develops within 5 to 10 days after the first appearance of the sore and is most marked at about the end of the second week. At about the end of the first week there develops an enlargement of the lymph glands in nearest anatomical relation, that is, of the glands with which the lymphatic vessels draining the region of the sore communicate. A number of glands are enlarged but there is usually one gland (the indicator) of the group larger than the others about it. This adenitis (or bubo) is not of an inflammatory type, the glands are not adherent to the surrounding tissues, but are felt as firm, elastic, freely movable, insensitive tumors. The glands do not break down and suppurate. In a proportion (20%) of cases a lymphangitis involves the lymph vessels leading from the chancre. It is evidenced as a painless, often beaded hardening of the vessels leading from the sore and extending towards the enlarged glands. Hard, firm, painless cords can be palpated.

In the diagnosis of the primary lesion we have, then, features which considered conjointly determine its specific nature. The chancre is usually a solitary lesion; of round or oval form; but little if elevated at all above the surrounding tissues; usually an erosive lesion (ulceration if extensive is a complication); has a firm, cartilaginous, indurated base; the indolent (non-suppurating) bubo is a constant feature; and the secretion is scanty and serous. When the period of incubation following exposure can be determined its value as a diagnostic feature is of the greatest importance. In extragenital infections this factor in diagnosis, often not obtainable even in genital infections, cannot often be called to our aid. The chancre lasts usually not more than 4 to 6 weeks, but the induration of its base may persist some little time after the surface has healed over. Confrontation (examination of the party from whom the infection may possibly have been derived) will, when obtained, and the person in question manifests contagious lesions, be of value.

Such are the characteristic features upon which we base a diagnosis of the genital chancre and each of these features must be looked for when examining an extragenital lesion in order to pass judgment as to its specific or non-specific nature.

Extragenital chancres may not present all the typical features (and the same is true in many cases of the genital primary sore) and we may fail to consider syphilitic infection as the etiological factor from the mere fact that the lesion is extragenital.

A chancre of the lip is generally on the vermillion border and may vary in size from a small papule to a large mass. It usually begins as a small oval sore with raw, flat, shining surface and rounded edges. More or less induration develops at its usual time, and the submaxillary bubo is usually marked. In this location the chancre usually occasions considerable distress. The character of the lesion and the development at the stated intervals of its special features (induration and adenitis) are the essentials upon which we determine its nature.

An epithelioma (cancer) of this region can usually be differentiated by the fact that it is rarely seen in persons under 40 years of age and is extremely rare in women; that its surface is irregular with raised everted edges; that it develops more slowly; and that the involvement of the anatomically related lymph glands appears usually only after some months (at a time usually when the chancre would have healed spontaneously).

The primary lesion may appear on any part of the tongue, but is most commonly seen on the dorsum towards the tip and on the anterior portion of the border. The lesion is likely to be quite large and the surrounding tissues infiltrated widely by the lymphangitis. The induration is of cartilaginous hardness and subhyoid and sometimes submental adenitis develops. Chancre of the gum is an exceedingly rare lesion. It appears as an eroded induration surrounding the roots of several teeth.

When the primary lesion develops upon the tonsil, it is likely to be mistaken at first for an ordinary sore throat. There are the general local symptoms of a tonsilitis—fever with local pain on deglutition and general enlargement of the tonsil. Inspection may show the trouble to be unilateral and a cause apart from that of ordinary sore throat is to be suspected. The chancre may appear as a small eroded papule, but more commonly the tonsil is swollen to double or triple its size and covered with a thick adherent false membrane under which the surface is flat, eroded or exulcerated. The surrounding tissues are swollen. Adenitis of the lateral cervical glands develops. All the glands of this region may be enlarged, but the largest (or indicator) gland causes a visible projection. Occasionally this is the gland at the angle of the jaw; more commonly it is the gland under the middle of the sterno-mastoid muscle and is difficult to palpate owing to its situation. Palpation of the tonsil with the fingers should not be omitted as it reveals a marked induration,—the tonsil is firm and tense. The pain on deglutition is severe. The tonsil increases rapidly in size. It is unusual for hemorrhage to occur as is common in malignant disease.

Vincent's Angina is a localized, non-febrile affection of the mucous membrane of the mouth. When ulceration occurs and the related lymph glands are large and tender it may be difficult to differentiate clinically from a chancre. In such a case microscopical examination will afford the positive evidence. The ulcer, however, is superficial and surrounded by a general inflammatory area, is very sensitive, and the time of development of the adenitis may not correspond with the history of the specific lesion.

The next phenomena observed in the history of an infected person are those which are termed the secondary symptoms and confirm the diagnosis. These symptoms are:

Erythema of the Fauces.
Alterations in the blood—Anaemia.
General lymphadenitis.
Fever.
Headache, neuralgic, muscular and articular pains.
Alopecia—loss of hair.
Syphilides (eruptions) of skin and mucous membranes.

The alterations in the blood begin to show at about the third or fourth week after the appearance of the chancre, and the fever usually develops about a week prior to the appearance of the syphilides whose average date is at the end of the sixth week, the time also when the general lymphatic enlargements are noted. The period of tertiary symptoms is characterized by the formation of gummata and diffuse gummatous infiltrations which occur most commonly during the third or fourth years after the chancre. These new formations (tumors) when they go on to necrosis, cause the unsightly scars and deformities so frequently seen in those subjects who have neglected treatment or in whom the treatment has not been effectively administered over an extended period. The gumma develops as a single tumor, as a group of nodules, or as a diffuse infiltrated patch. Such new formations increase slowly and their development is not attended by pain. When the tumor has reached its full size it softens and fluctuates. The overlying surface becomes discolored and ultimately ulcerates through discharging a small quantity of puriform gummy liquid. The resulting ulcer is round, oval or irregular, its edges abrupt (as if punched out), usually infiltrated and surrounded by a hyperaemic areola. The scars left upon the skin after such a process are usually spoken of as resembling cigarette paper,—atrophic (without the usual papillary markings of the skin), smooth, of ivory whiteness and depressed. The presence of such scars may aid us in making a diagnosis in a particular case.

The gumma develops in the mucous membrane or submucous connective tissue either as a diffuse infiltration or as a circumscribed tumor (not, however, as distinctly circumscribed as the similar lesion of the skin). On the tongue these late lesions develop in the form of a gumma or a diffuse sclerous glossitis. The two forms are quite frequently associated. A single gumma or multiple gummata may develop either superficially or deeply seated. Increase in size is comparatively rapid. Appears as a painless, hard lump or mass, the overlying surface being redder than the surrounding mucosa. If seen and recognized at this stage, treatment may accomplish its absorption and disappearance. If softening occurs it resembles an abscess and then breaks leaving a deep sloughing ulcer with undermined edges on a moderately indurated base, and when healing occurs a permanent scar is left. Gummata occur most commonly on the dorsum of the tongue, rarely upon its edge, and never upon the under surface. If an adenitis accompanies such an ulceration it is entirely accidental,—due to secondary microbic infection.

Cancer of the tongue occurs almost exclusively in men over 45 years of age; is usually situated on the border and may develop on the under surface; is usually a solitary lesion; often develops upon an area of leucoplakia; the submaxillary or subhyoid glands enlarge progressively; and its ulcer is shallow, with everted edges, bleeds easily, and has a base of wooden hardness.

Sclerous glossitis is a characteristic lesion of syphilis. No other condition simulates it. The tongue is increased in size and lobulated,—deformed by irregular swellings separated by deep furrows. The lobules are of cartilaginous density. The tongue is insensitive, clumsy and stiff. The swellings are caused by gummatous infiltration of its substance, but there is no tendency to softening and ulceration,—the masses retain their hardness. The whole tongue may be affected or there may be only a few infiltrated areas. Secondary fissures and excoriations which are quite sensitive may develop. Ultimately, gradual and progressive contraction of the gummatous deposit leaves the tongue smaller than normal.

Gummata of the tonsil and soft palate are commonly diagnosed after ulceration has occurred. The tonsil is swollen and hard. There is little pain but usually some interference with hearing. The lymphatic gland behind the angle of the jaw (contrary to the general rule) is usually inflamed and sensitive (from mixed infection). A gummatous infiltration producing redness, tumefaction and relative immobility may develop in the soft palate, causing scarcely any pain, to which the patient may pay little attention until necrosis sets in, causing ulceration, perforation or destruction. Similar processes cause perforation of the hard palate and communication between the nasal and oral cavities. You are all familiar with the ultimate contractions, adhesions and deformities resulting in these cases.

Defects in the size of the teeth are characteristic of hereditary syphilis, but do not necessarily imply its presence. The Hutchinson's teeth (the two upper central incisors of the permanent dentition) with concave, crescent-shaped borders directed towards the median line are definite evidence of the disease.

An acute gummatous infiltration may destroy a portion of the alveolar border of the inferior maxilla. It begins as a swelling around the root of one or more teeth. The teeth become loose, and in a few days or weeks a portion of the alveolar process is shed and the teeth come out. At times the process may be checked with the loss of little or no bone.

Leucoplakia (milk spots, smoker's patches) is a diseased process of the tongue and mucosa of the cheeks characterized by the appearance of bluish-white, gray or opalescent patches. Strong smoking and syphilis are the chief etiological factors, while occasional cases are seen in which neither factor is operative. Syphilitic leucoplakia often accompanies the lesions of sclerous glossitis or may be secondary to papular and ulcerative syphilitic processes particularly after strong cauterizations which penetrate the mucosa wounding the papillary bodies so that healing cannot occur without a scar (whitish and depressed). The opalescent patches are slightly depressed, or at least not perceptibly elevated. The borders of the patches are recognizable but not sharply defined. The specific form has a special predilection for the tongue and is less common on other surfaces. In simple (non-syphilitic) leucoplakia the bluish-white plaque is raised above the surface (as if a piece of cigarette paper were stuck on the surface); the borders are sharply defined (as if cut out with scissors); and it seldom occurs on the tongue alone, but is usually found also on the buccal surfaces (within the commissures of the mouth and along the line of contact of the upper and lower teeth). In both forms of the disease the epithelial cornification results in fissuring of the surface and consequent pain and discomfort on eating or drinking anything hot, acid, or highly seasoned. The differentiation between the specific and simple forms is often impossible. Cases have been proven of syphilitic origin by the result of hypodermic administration of mercury which would not yield to mercury administered by mouth. It will be well then to consider all cases of leucoplakia as of syphilitic etiology,—the true nature of the case to be determined by the results of treatment.

We have left now for consideration a lesion of syphilis of the mucous membranes whose recognition is of greater importance than those we have thus far considered. The chancre occurs but once, and while its secretion is extremely contagious, it is usually treated and protected, and furthermore lasts but a few weeks. Infection is seldom traced to the late gummatous lesions though they are possible sources of the virus. The mucous patch is the commonest form of syphilitic manifestation on the mucous membranes and is the source of infection in a large majority of all cases of acquired syphilis.

A diffuse symmetrical erythema (redness) of the fauces may precede or accompany the secondary symptoms. It occasionally occurs as round or oval areas (macular eruption). This diffuse redness may be limited by a sharply defined margin. It persists longer than an ordinary sore throat. It is commonly present when the first mucous patches appear.

The mucous patch is the form assumed by the papular syphilide when occurring on the mucous membranes. On these surfaces it is not markedly elevated like the papule on the skin, and its surface is always denuded. It occurs clinically in the form of an erosion, as a circumscribed diphtheroid patch, as a superficial ulceration, and as a vegetating papule.

The erosion is a round or oval infiltrated area, but little elevated above the surrounding surface; flat or slightly convex; and denuded of its epithelium showing a smooth or slightly roughened, glistening, moist surface. It may be of raw ham color or only a little redder than the surrounding mucosa. Varies in size from pinhead to split pea or larger. Appears and disappears in a day or two or may persist several days. May be sensitive, but usually is not so. Its site of election is the dorsum of the tongue. When the lesions are confluent, the outline of the combined lesion is made up of segments of circles (polycyclic).

The circumscribed diphtheroid patch is the commonest form of the mucous papule. It occurs on the tonsils, uvula, free border of the soft palate and its pillars, on the side of the tongue and on its under surface, on the inner surface of the cheeks and mucous surface of the lips. It elects particularly the pillars of the fauces and tonsils. It occurs anywhere in the mouth, but on the dorsum of the tongue and on the gums less frequently. Commonly, lesions coexist on these several areas. In size they vary from that of a tack head to a finger nail. In shape, rounded or oval. They may be discrete or confluent (and then the lesion is of polycyclic outline). As occurring in the mouth the diphtheroid papule is usually not elevated but level with the surrounding surface, or its center slightly depressed. As the surface of the papule is poorly nourished it soon becomes macerated. When fresh it is of a bright red or raw ham appearance, but becomes covered with a gray or grayish-yellow pellicle of thickened and softened epidermis giving the appearance as if penciled with the nitrate of silver stick. This pseudo-membrane is usually closely adherent but sometimes can be separated and leaves a bright red surface which bleeds easily. This grayish membrane covering the central portion after a time sloughs off, leaving an abraded lesion which may become more deeply invaded, giving a shallow, well-defined ulceration with a mucoid or mucopurulent secretion. There is no induration of the base. The sharp-cut, well-defined edge is surrounded by a well-marked, narrow, hyperaemic areola, and beyond this there is often a gray ring rendering the dimensions of the lesion larger. When healing, the patch loses its diphtheroid covering, presenting the appearance of an erosion and ultimately only a pigmented spot. The mucous patch is not as a rule very sensitive. A patient may present numerous lesions in his mouth and not be aware of their existence as they may cause no pain or inconvenience. It may, however, be quite sensitive, particularly if irritated by a rough tooth and inflamed from septic infection (from neglect of oral hygiene) and hot drinks and acid foods will then provoke pain. When occurring on the edge of the tongue they are prone to ulcerate on account of contact with the teeth. At the angle of the mouth, where fissures usually develop, it is quite painful. On the tonsil, where deep ulceration is prone to occur, it may be very painful and interfere with deglutition. If, during its course, from irritation or sepsis, the patch becomes distinctly inflammatory, the lymph glands may swell and sometimes suppurate. Local irritation acts as a predisposing cause in exciting the eruption of mucous patches. The use of tobacco (smoking and chewing) is responsible for frequent and long continuing relapses. A decayed or broken tooth may determine the site. Mucous patches persist as a manifestation of the disease, not through persistence of the individual lesion, but by the constant development of new ones. When they appear as late lesions—that is, several years after the chancre—they may be very resistant to treatment. When the patches have recurred persistently and ulceration been deep the mucous membrane of the tongue and buccal walls may be glazed, cracked and fissured. There is no elevation of temperature or other systemic disturbance accompanying the eruption, and the course of each lesion is slow and indolent.

The vegetating papule, as its name implies, is a mucous papule modified by overgrowth of the papillary layer producing broad, flat elevated lesions with indurated base seen so frequently about the vaginal and anal orifices. They are seen only exceptionally about the mouth.

Other lesions of the oral cavity of varied (non-specific) etiology may, upon superficial observation, be confused with the mucous patch, but the special features of the latter must be kept constantly in mind and with the other data obtainable a diagnosis can usually be arrived at.

In diphtheria and croup the severity of the constitutional symptoms preclude the possibility of error. Ulcero-membranous stomatitis is contagious and epidemic, attacking children from 3 to 8 years of age, but may occur in the adult. In this affection there are some fever and malaise and extreme dysphagia, accompanied by salivation and an offensive odor from the mouth. On the internal surface of the cheeks, floor of the mouth and borders of the tongue are seen thick patches of yellowish-white or buff color with a tendency to separate at their edges, disclosing a samous ulceration which bleeds easily.

Aphthae (aphthous stomatitis) is a recurrent eruption frequently seen in syphilitics and simulates the mucous patch. One, two or three occur at a time on the tongue, gums or lips. At first as a small pustule the size of a millet-seed, but seldom observed in this stage of their development, as the pustule quickly ruptures, leaving a small funnel-shaped ulceration. The lesion remains small. It is covered with snow-white, macerated epithelium and surrounded by a highly inflamed red area (not a marginal areola) shading off gradually into the normal color of the surrounding mucosa. These lesions are irritable and quite painful,—very sensitive to every movement of the tongue when they occur upon it or when it rubs them. They differ in this respect from the relatively insensitive specific patch. They heal spontaneously after several days.

Simple harpes (cold sore or fever blister) as occurring on the lips is to be differentiated from the mucous patch. At first there is usually a rather severe tingling, burning and feeling of tension, and in a few hours a group of vesicles upon a reddened base makes its appearance. These may remain as distinct small vesicles or become confluent, forming a small irregular bleb. Rupture does not occur spontaneously and the translucent or turbid contents disappear by absorption. When ruptured, they leave a superficial abrasion or excoriation, healing under a serous crust which ultimately drops off, leaving no trace. On the lips the vesicles may be so small and so closely grouped together that the individual vesicle is distinguished with difficulty. They generally remain unbroken and dry to thin crusts of a yellowish color. When at the angle of the mouth, fissuring may occur and from irritation the lesion persists for weeks. The features to be considered in the diagnosis are: The sudden outbreak of a few tense painful vesicles, closely grouped together, of equal size and form, developing at the same rate, and situated on an erythematous area. When the herpetic eruption occurs within the mouth, the vesicles quickly rupture. The surface of the lesion is covered with whitish epithelium which falls off, leaving a small, reddish superficial erosion of rounded form. The lesions are small and usually grouped, and occasionally an isolated pinhead sized lesion may be found near by.

When mercury is continuously administered to a syphilitic, the eventuality of its ill effects when given in too great an amount must constantly be reckoned with. Such effects may follow close upon the specific manifestations for the cure of which it is prescribed, and unless care is taken to distinguish between the two conditions, much harm may be done. A patient once carelessly ptyalized, never bears mercurial treatment well thereafter. Its administration must be promptly interdicted upon the least evidence of its overaction.

Mercurial stomatitis nearly always begins as a partial gingivitis,—seldom generalized at first. This localized gingivitis usually elects one of several points and in examinations of the mouth these should be specially observed. (Fournier). An inferior median gingivitis which affects the lower incisors. Peripheral gingivitis which affects a carious tooth or stump. Genial stomatitis affecting the mucous membrane of the cheek opposite the last molar tooth. Retromolar detachment which occurs usually in connection with the ulceration on the cheek. Separation of the gum behind the last molar tooth, forming a loose projection which bleeds easily. This symptom is too frequently overlooked by both the physician and patient. The initial local manifestation in mercurial stomatitis consists of a painful swelling of the gum and a peridental necrotic patch—a grayish-yellow edge along the line of contact with the teeth. There is an increased flow of saliva night and day. The swelling of the gums becomes generalized, the cheeks are swollen and the tongue, too, upon which the teeth make their imprint. Ulceration supervenes. The ulcers are shallow, of a grayish-white color from necrotic epithelium covering their surface and surrounded by a diffuse inflammatory area. In order then to recognize the effects of mercury upon the mouth we must bear in mind the special features of the condition. The patient complains of a metallic taste. The teeth are sensitive so that pain is felt when the jaws are snapped together. Gastro-intestinal disturbances are associated,—pain in the stomach, colic and diarrhoea. The breath is foetid. The first inflammation noted is a partial gingivitis usually electing the regions mentioned. When ulcers develop they are surrounded by marked inflammatory redness. The gums are swollen and later the cheeks and tongue so as to interfere with mastication and deglutition. Ulceration about the incisors is accompanied by retraction of the gums. Mercurial ulcers rarely occur upon the fauces, dorsum of the tongue, or at the angles of the mouth where the mucous patches are common. When the administration of mercury is stopped and oral hygiene strictly enforced, the symptoms will soon disappear unless the ptyalism is severe; whereas, if the lesions are syphilitic manifestations they will most likely increase and multiply.

Retromolar congestion or ulceration incident to the eruption of a wisdom tooth is to be ascribed to its evident cause. Simple gingivitis occurs from neglect of the mouth, permitting the accumulation of tartar beneath the gingival border. Ulcerative gingivitis occurs in the cachectic and the ulceration follows the alveolar border. Dental glossitis is the term applied to the swollen and painful condition of the tongue bearing the imprints of the teeth and projecting into the spaces where the teeth are absent, due to chronic irritation when the care of the mouth is neglected and the teeth misplaced, inwardly projecting or with broken edges. The irritation of a broken tooth may produce a dead white patch of hypertrophied epithelium which may ultimately ulcerate. Such a traumatic ulcer is chronic, painful, irregular in outline, with callous and sometimes vegetating border, and placed upon an inflammatory base. Its surface is covered with pus which can be wiped off, and it then bleeds easily. It is differentiated from the mucous patch by these characteristics and examination will reveal the offending tooth. A deep, painful ulcer is seen on the gums between the teeth, as the result of accumulation of tartar on dirty teeth, particularly during a prolonged course of administration of mercury by the mouth. Non-specific ulcerations in the mouth of a syphilitic are a source of confusion. A decayed or broken tooth may produce irritation inviting the eruption of a mucous patch; the persistence of the irritation may hinder healing and ultimately result in transforming the patch into a traumatic ulcer. The patch loses the characteristic features of the specific lesion, may persist indefinitely or yield very slowly to treatment, and not infrequently this is the condition present when no other part shows evidence of the disease. Such lesions, persisting and relapsing and unaccompanied by any other sign of the disease are often interpreted by the bearer as repeated reminders of his misfortune. The services of his dentist will relieve him of this annoyance. In doubtful cases we must give due consideration to all factors before expressing an opinion.

As the mucous papule is the most frequent source of the contagion in syphilitic infections, is so frequently the only sign of the diseased to be observed, and as it appears and reappears during a number of years (not infrequently for 5 years) the dental surgeon should be equipped for its recognition. Bear in mind that the mucous patch is a recurring or relapsing lesion; that it occurs most frequently on areas (tonsils and fauces) not subject to special irritation such as a broken tooth; that they are not markedly inflammatory and are comparatively insensitive; its well defined border and reddened marginal areola and adherent pseudo-membranous covering. While a positive diagnosis of secondary syphilitic lesions which have not been subjected to treatment (particularly mercurial applications) can be made by the competent microscopist by the examination of a slide prepared from the serous exudation of the lesion, it is not to be expected that the dentist shall familiarize himself with such technique. When the mucous patch is modified by irritation, pus infection or cauterization we must call to our aid the history of the case or other data. By inquiring we may learn that the patient has had a number of small sores in his mouth on and off for some time; that he is at present or was until lately taking medicine regularly (the tell-tale pills or drops). He may show the erythema of the fauces or give the history of a sore throat which persisted for several weeks (longer than the ordinary sore throat). The history of the chancre or of a rash over the body may be volunteered. Both may have escaped a patient's notice. The face may show a papular syphilide,—small, projecting, round papules of a brownish-red color equally distributed over the chin, forehead and cheeks. Palpation may disclose the enlarged cervical lymph glands. A slight huskiness or complete loss of the voice may be present. Persistent headache, insomnia and rheumatoid pains may be complained of. The general health may be below par and the patient be under weight. There may be a general thinning of the hair or an evident patchy baldness exist. Much confirmatory information can thus be obtained without even arousing the patient's suspicions as to the reason for our inquiries. If a patient, innocent of syphilitic infection, goes post haste to the physician for an examination, certainly no harm is done by your having suggested by your inquiries the advisability of such a course.

Not infrequently the dentist sees unmistakable lesions of syphilis in the mouths of those who are not under medical treatment. To advise consultation with a physician may do such a person a service of inestimable value. The potentiality for harm of an untreated syphilis must not be underestimated. To recommend that he get from his pharmacist some protiodide pills or potash solution is not to his best interests. Not all cases are successfully treated by such simple medication. Although these remedies may form a good part of the treatment prescribed by the physician, there are many cases which will tax the resources of the expert syphilographer. A treatment that does not prevent the frequent relapse of mucous patches cannot be considered effective medication. An early success in overcoming the tendency to the recurrence of these lesions speaks best for the potency of the prescribed treatment and certainly gives the best prognosis for ultimate recovery. If mucous patches are recurring from time to time, a change in the form of mercury prescribed or in the method of administration is imperative.

It is a desirable practice on the part of physicians to insist that syphilitic patients avail themselves of their dentists' services before or upon the inauguration of a mercurial course, even if nothing more than a thorough cleaning of the teeth is needed. During his mercurial courses occasional visits to the dentist should be insisted upon. He should be required to inform his dentist of the presence of his infection, as there may be no oral lesions or other manifestations to warn him. This they may hesitate to do, and the physician can then refer them to a practitioner of acquired immunity. Careful attention to the teeth and gums will permit of the administration of a potent mercurial course in patients who otherwise could not stand efficient treatment. The dentist's services are a material aid in combating the disease.

In examining a mouth not only the teeth are to be observed, but the gums and all mucous surfaces should be inspected. The risk of unknowingly treating a contagious case will be minimized. Frequent brushing of the teeth with soap or an alkaline dentifrice and frequent lavage of the mouth with an astringent and alkaline mouth wash or at least hot water, are measures of oral hygiene to be insisted upon. The extraction of broken teeth is sometimes the preference. All sources of irritation to the mucous membranes must be removed. Deep cauterization of early mucous patches is scarcely to be recommended as such treatment may be productive of scarring, whereas, if left alone to heal under the influence of systemic treatment or less severe local measures which will favorably influence its course, it will heal without leaving a trace.

When working upon a syphilitic, if one is not immune to infection through having suffered from it, it is well to protect the hands with rubber gloves. It can scarcely be claimed that properly fitted light rubber gloves interfere to any considerable extent with the sense of touch or hinder skillful workmanship. The abdominal surgeons have universally adopted them and in their work no material hindrance could be tolerated. Doubtless it is much a question of practice and habit. An abrasion of the epithelial surface so minute as to elicit no pain or tenderness to make one cognizant of its presence and that consequently passes unnoticed, may furnish a sufficient opening for entry of the virus. It is not enough to avoid contact with the lesion itself, for the saliva may be contaminated and capable of transmitting the infection if it moistens the abraded skin. When we consider that probably one in twenty of patients suffers at some time from syphilitic infection the danger of accidental inoculation becomes a real one. When one has been exposed and there is the slightest reason for questioning the integrity of the epithelial surface the prophylactic rubbing with the 33% calomel in lanolin ointment is the best protection.

It is possible that an instrument used upon one person may, if made use of again within at most a few hours, serve as a carrier of the infection to another. Patients should be protected against the possibility of such an accident. Some are in the habit of laying aside a number of instruments for use only upon patients known to be syphilitic. But, there are many operated upon who show no lesions from which we may know them to be infected cases and who do not offer the information, and instruments intended for clean cases are thus soiled. There is only one way to insure the proper protection to all patients and that is by thorough sterilization (preferably by boiling) of all instruments before they are used again. We avoid the public drinking cup at the spring, but permit instruments to be used in our mouths in an office where there is no provision for their sterilization.

DISCUSSION.

Dr. G. F. Bowman: If any defense for the writing of such a paper was needed I think you will agree with me that one sentence of the essayist furnishes it, and that is, "The mucous patch is the commonest form of syphilitic manifestation and is the source of infection in a large number of cases of acquired syphilis."

Such a statement coming from one so well fitted to speak authoritatively as the essayist can well give pause to each of us when we stop to consider how common syphilis is, and therefore how we are constantly exposed to the danger of infection in our daily work from these same mucous patches.

Fournier states, I believe, that nine out of ten cases of acquired syphilis are infected by mucous patches; note, 90% are the result of infection direct from the field of our daily labor. A beneficent Providence must watch over the dental profession, or a much larger percentage of us would have been infected long ago.

I believe it is estimated that about thirteen per cent. of the total population are syphilitic. In other words, roughly speaking, one patient in eight seeking our services is a source of acute danger, and the only protection we have is our personal recognition of the disease in its oral manifestations, for from clinical experience I am satisfied that the proportion of patients who will voluntarily warn the dentist, or even tell the truth when questioned, is negligible. This phase of the subject presents a curious study in the physiology of the disease, and how many of us are capable of reading aright the clinical signs of the oral cavity which may fairly cry syphilis? Few, indeed, I am afraid; hence the peculiar value of this paper.

Dr. Cavallaro, of Florence, Italy, has, in a series of articles recently published in the *Dental Cosmos*, studied exhaustively the pathological and structural alterations of the dental tissues due to hereditary syphilis, and has added more to our knowledge of this phase of the subject than possibly anyone since the time of Hutchinson—1856, and I understand his conclusion is it is not alone the cupped centrals of Hutchinson which are indicative of hereditary syphilis, but he goes farther and points out the connection between the well known cuspal atrophies of the canines and first permanent molars' hereditary syphilis, and has even found evidence of the characteristic erosions in the deciduous set. From his observations and studies it seems established that syphilis is at least the only known disease that does produce these cuspal atrophies, and it would be wise, therefore, to regard patients presenting with such teeth with grave suspicion.

It is well to bear in mind that it is our duty not only to be careful to avoid infection of ourselves, but, what is of equal or greater importance, to guard religiously our non syphilitic patients against infection from our syphilitic ones through the use of infected instruments, hands, etc. The latter seems to me the greater danger.

Aside from the paper's value in emphasizing the importance of the subject matter, it is a pleasure to hear a member of the medical profession speak so familiarly of the pathology of the mouth, in a more strictly dental sense, as the essayist incidentally does, and shows, I think, what a well rounded student he is.

In conclusion, I wish to say I personally enjoyed this paper very much, and beg to thank the essayist for coming here today and presenting his subject as he has in a careful, painstaking manner.

PRACTICAL POINTS FOR THE DIAGNOSIS OF SYPHILIS BY THE DENTIST

By H. G. Langworthy, M. D., Dubuque, Iowa

SYPHILIS is an infectious disease acquired by contagion or transmitted by inheritance. The manifestations of syphilis about the nose, throat and mouth as seen by the dentist are usually due to the acquired form. Acquired syphilis is observed in its several stages, primary, secondary and tertiary. The site of inoculation, usually somewhere on the sexual organs, becomes the seat of the primary sore (*initial lesion*) some four to five weeks after infection. Two months after the appearance of the primary sore the secondary stage appears with the constitutional symptoms of slight fever, thinning of the hair, pain in the bones at night, eruptions of the skin and mucous membranes and prolonged sore throat. Several years after the secondary stage certain granulomatous growths or thickenings develop in various portions of the bones, skin, viscera, brain, etc., and termed the late *tertiary* lesions. Mode of infection: In a large majority of all cases the disease is transmitted by sexual contact. There are, however, other modes of accidental inoculation. It is surprising, considering the large number of cases handled by physicians, surgeons and dentists, that accidental infection is not more common. While a characteristic organism, the spirochæte pallida, may be obtained from smears of syphilitic lesions, its demonstration is at present so difficult as to practically take this means of diagnosis out of the hands of the average physician or dentist. One must rely therefore for diagnosis on the history and clinical symptoms alone. Extragenital Infection: Perhaps the most common of the extragenital forms of acquired syphilis is the lip and finger chancre. Mouth and tonsil chancres occasionally result from improper practices, but are rare. The question of hereditary transmission will not be considered in this paper. Primary or Initial Lesion: The initial lesion or so-called hard chancre, is occasionally seen on the lips, and is obtained through the use of knives, forks, cups and other household utensils used in common with syphilitics, also through kissing, infected pipes and from unclean dental and surgical instruments. A hard chancre appears from three to four weeks after infection and never earlier than the twelfth day. A chancre of the lip presents the appearance of a hard indurated mass about the size of one's finger nail and covered with a little secretion. The lip in the immediate neighborhood is often considerably swollen and the lymphatic glands beneath the inferior maxilla on the same side may be slightly enlarged. The chancre disappears after a few weeks, leaving little if any scar. As a chancre of the lip may be mistaken for other simple sores, or possibly a beginning epithelioma, the dentist should not express his suspicions as to the nature of the lesion until he had made sure of his diagnosis by instituting certain inquiries or by recommending the patient to a physician for observation covering a few weeks. On the sexual organs, as has been said, the initial sore appears about a month after inoculation and resembles a small reddish papule which gradually enlarges into an ulcer. The tissues about the ulcer become indurated and the glands in the groin enlarged. The general condition of the patient at this time is good and he may be entirely ignorant of the nature of his trouble and gives it little, if any, thought. The diagnosis of a Hunterian or hard chancre is difficult, and is, as a rule, not made until sufficient time has elapsed for the appearance of the secondary stage, or by possibly finding the spirochæte pallida microscopically in the secretion. Any sore, however, with a sharply defined border, indurated, slightly sensitive with a scanty non-purulent secretion and movable, should excite suspicion.

Secondary Stage: Some eight or ten weeks after the appearance of the primary sore on the sexual organs or lip, as the case may be, the signs of secondary syphilis burst forth. The symptoms of the secondary stage are as follows: Slight fever, headache, poor appetite and skin eruptions of all kinds, the most common being a macular, papular or even pustular syphilitic rash on the abdomen, chest and extenser surfaces. The papular syphilitic skin eruption is rather coppery or reddish-copper in color and appears over the forehead at the junction of the hair line, forehead, chest and abdomen, etc. With the slight fever, rash and beginning thinning of the hair, the throat and mouth become sore and rheumatic-like pains in the bones are felt at night. The tonsils are swollen, entire throat inflamed and swallowing is painful. Lesions of the mucous membranes, such as mucous patches, are among the most constant and important manifestations of this protean disease. The secondary signs of syphilis are easy to recognize, and following some weeks after a suspicious sore on the genitals or elsewhere, are quite conclusive.

Throat Soreness: The patient usually gives a history of having had a sore throat lasting for a number of weeks. One should always be suspicious of any severe sore throat which has lasted a number of weeks. Simple sore throats almost never last more than a week or ten days. Examination: The usual conditions found at the time of examination during the secondary stage are (a) mucous patch, whitish areas frequently eroded and situated on the inner side of the lips, mucous lining of the cheeks, margin of the tongue, tonsils and fauces. They are little raised above the surface of the mucous membrane and are usually symmetrically situated. For instance, if a mucous patch is situated on the mucous membrane on one side or at the angle of the mouth, there is likely to be another one found on the opposite side in about the same situation. (b) The entire pharynx is also much reddened, due to a syphilitic erythema. (c) The tonsils are reddened, swollen and often present irregular shaped ulcers with grayish-white borders.

Tertiary Lesions: The tertiary manifestations of syphilis do not appear in the mouth or elsewhere until often years after the primary sore. As a rule they are not seen until the elapse of four to six years. The form which a tertiary syphilitic lesion takes is a gumma. If the gumma is overlooked or remains untreated, ulceration and necrosis of the tissue takes place. The healing of a syphilitic ulceration is also characteristic from the appearance of the cicatrix. A gumma is a more or less rounded mass slightly reddened, involving the mucous membrane or some part of the pharynx, uvula, pillars, soft palate and slowly ulcerates. In all doubtful cases of obstinate old chronic sores about the mouth, perforations through the bony palate, or ulcerations on the tongue and tonsils, acquired syphilis should be kept in mind, and the patient placed upon the syphilitic test of ointment of mercury and potassium iodide 20 drops t. i. d. If the lesion is a syphilitic one it will usually be decreased in size or healed in the course of a few weeks.

General Diagnosis of Syphilis: As a rule there should be little doubt about the existence of syphilis in the secondary stage. Negative statements by patients in regard to absence of a primary sore must be accepted with extreme caution. Patients will deliberately lie with reference to the absence of a primary sore when the question of syphilis is raised. Inquiries should be quietly made into the history to ascertain whether the patient has had skin rashes followed by sore throat and falling of the hair. If this has followed a sore of the genitals further confirmation is hardly necessary. A careful examination should be made in all doubtful cases of the entire body, as well as the mouth and throat, for signs of old syphilitic scars, buboes and nodes on the bones.

Treatment: Syphilis is amenable to treatment. A bit of unguentum hydrargrum about the size of a pea is rubbed into the skin two or three times a day for several weeks until the teeth are noted a little tender. It is then discontinued for a couple of weeks, but only to begin the inunctions once a day for months. Potassium iodide may also be started just a little later, beginning with fifteen drops of a saturated solution three times a day and increasing the dose slightly each week. Our main dependance in the secondary stage, however, is in some form of mercury continued with as few remissions as possible over a period of two years.

It is surprising how well patients will stand the prolonged courses of mixed treatment of mercury and potassium iodide. Treatment of syphilitic ulcerations of the mouth, gums and tonsils, etc., in addition to the general mixed treatment as outlined above, should also include touching the mucous patches or ulceration with silver nitrate or chromic acid and keeping the mouth thoroughly clean with a mouth wash or throat spray. Patients should be cautioned against allowing any one else to use the same knives, forks, dishes, etc., without being first boiled. Dental instruments should always be washed, dipped into boiling water and then into alcohol, or better still, have set aside a particular set of instruments for the syphilitic and confine their use to that case alone.

SYPHILIS WITH REFERENCE TO RECENT EXPERIMENTAL WORK*

By Henry Rockwell Varney, M. D., Detroit,

Clinical Professor and Lecturer on Dermatology and Syphilology in the Detroit College of Medicine. Dermatologist to Harper Hospital; State Reform School; Dearborn Retreat. Member of the International Congress of Dermatologists.

MUCH HAS been written upon syphilis, much more should be written, and much must be written before we can become united in the successful management and control of this disease.

A consideration of some of the following facts, abstracted from recent research, should be of interest in every special branch of medicine, because every physician and dentist must consider this disease in his given field of work. It is by such considerations that we are to have a more definite understanding of this disease and thereby prevent not only its spread but some of the final results of its ravages, which may be permanent disfigurements to patients, deformity, or they may become helpless, permanent inmates of state institutions.

The fruits of recent research have been so productive in adding to our knowledge of syphilis, that our text-books on the subject, even with their frequent new editions, have been unable to keep abreast of the times.

The true etiological factor, the spirochaeta pallida of syphilis is now generally accepted; finding them in questionable lesions, is of inestimable assistance to a correct diagnosis. Animal experimentation has also added volumes of accurate knowledge pertaining to all phases of the disease. It is now demonstrated that the same organism is capable of producing the same disease in the higher order of apes as is produced in the human. Without doubt the most valuable knowledge obtained through animal experimentation is that pertaining to treatment, both prophylactic and constitutional. We no longer treat syphilis symptomatically, with no knowledge of its cause more than that it was infectious; we no longer instruct our students to wait until the secondary symptoms of syphilis, symptoms of general infection, present themselves, before a diagnosis is made, and specific treatment of questionable sores is begun. We now know that the single or multiple chancroid, so diagnosed clinically, is often a mixed infection and being so diagnosed clinically is often discarded by the physician. Because of the attitude of the physician, mild secondary symptoms escape the notice of the patient, who, later in life, presents grave manifestations of the disease. We now have diagnostic means, not only of finding the organism in questionable lesions, but of demonstrating protective substances in the blood serum in which infection has taken place.

THE ORGANISM

In taking up the recent advancements in the knowledge of this disease let us first consider the organism. The etiology of syphilis for centuries has been the deepest of mysteries and more than a hundred causes have been heralded but none have stood the test of Koch's Law. The difficulties in recognizing and isolating the organism have been many, yet the disease is produced in animals, and the organism demonstrated in the infected animal during all stages of the disease, and in all lesions of it. This makes clear that the spirochaeta pallida, which is now being classified as a flagellate-like protozoa, is the etiological factor of syphilis.

---

*Read before the Michigan First District Dental Society.

The life of the organism is but a few hours after leaving the body, demonstrating the slight risk from infection to which we are all often subjected, from the use of articles in common with the syphilitics.

The virulence of syphilitic virus can be preserved for some time in glycerine, 35 days (Jancko's experiments) as smallpox vaccine, yet the organisms die rapidly in glycerine. This virus or the virus passed through a Chamberlain filter is capable of producing infection in monkeys while the organism is unable to pass through the filter.

The greatest difficulty in demonstrating the organism arises from the fact that there are a number of common spirochaetes that closely resemble the spirochaeta pallida. Three of the most troublesome spirochaeta from point of differentiation are found in the buccal cavity.

Two of the most common, the spirochaeta refringens and spirochaeta buccalis can be differentiated and excluded from the spirochaeta pallida by staining with Giemsa stain. The pallida takes a pale red while the refringen and buccalis stain blue.

The spirochaeta dentium and the pseudo pallida both take the red stain and must be differentiated by their character of growth. The spirochaeta dentium can be grown on serum agar, is slightly thicker than the pallida and its curves more angular (saw like), while the spirochaeta pallida has a more corkscrew curve.

The spirochaeta pseuda gives far the most trouble and many workers maintain that it is impossible to differentiate it from the pallida if the examination is confined to smears obtained only from the mouth fluids.

If serum to be examined can be obtained from lesions other than the mouth, one may save time by detecting the living spirochaeta by means of the Darkfield Illumination.

They are seen by this means of illuminating as very thin and regular corkscrew-like spirals upon a dark background. They have a slow forward and backward motion and a very active rotation in longitudinal axis, bending motion of the whole body or only on end without changing their position in the field. They can be kept alive for days, while the virus loses its virulence in 6 to 10 hours.

The second important recent discovery of syphilis has been animal experimentation. It is proven that not only the highest forms of apes can be inoculated with the organisms of the disease, but that the lower forms of apes are susceptible. Great honor is due Professor Neisser for his extensive experimentations upon apes in this disease. He spent seven years in Java, the sole purpose of which was to study animal experimentation of this disease with the animal in its natural habitation. The important results of his work are that he proved that the animals, just as the human race, are susceptible to the virus of syphilis. Yet no animal has been found that is as susceptible as man. A primary sore develops, after which the whole body shows signs of general infection, characterized by cutaneous eruptions, general adenitis and involvment of the mucous membrane, especially the buccal cavity. Marked difference in the development of constitutional symptoms was noted in different species of apes; the lower forms seldom showed secondary symptoms and when shown they were very difficult to inoculate, only upon certain parts of the body, such as the eyebrows, genitals and scrotum, could they be inoculated, while the higher species could be inoculated on any or all parts of the body. During these experiments much attention was given to the development, course and severity of the disease from different strains of the virus, obtained from different lesions of different stages of the diseased, both human and animal.

No difference was noted in any stage of the disease, as influenced by the manner in which the animal was inoculated, except that the inoculations were more successful when the virus did not enter the blood stream. The disease ran the same course, with the same virulence, regardless of the stage of the disease, or from the lesion from which the virus was taken, whether primary or tertiary, demonstrating that the organism does not lose its virulence or become attenuated with age, but is capable of producing a typical infection, running the same course, when the organism is implanted upon a new field. The course of the disease then, if influenced at all, is brought about by the manner of implanting the virus, rather than by the strain. It also shows that any and all syphilitic manifestations, of whatever stage of the disease, harbor the organism and are directly produced by it. The area of inoculation or the initial sore of animals is not characteristic with its induration, as is the case in man, and often times the inoculation has been considered unsuccessful, so slight were the manifestations, until the animal was killed and the organism found in the internal organs.

Inoculations of infected blood, with but few exceptions, have been unsuccessful, while with the semen, Finger has twice produced the disease. Further experimentation along this line may be productive of definite knowledge in regard to the transmissien of the disease by parental infection.

Infected animals have also given us much knowledge in regard to the destruction of the organism by physical and chemical means. These prophylactic precautions, obtained by drugs, will soon become generally known as they are in France, and will without doubt, be of unquestionable value as a prophylactic measure in arresting the onslaught of this disease.

The advice governing the dispensing and use of such means should be most guarded and come from the physician.

Metchnikoff, by both man and animal experimentation, has shown that by the application of a calomel ointment applied at the site of inoculation, even after a period of from one to three hours, further syphilitic infection can be aborted by the destruction of the organism. He, Neisser and others, are advocating the use of such medical means as a general prophylactic precaution against the spread of this disease, not in the spirit of encouraging evil, or in any way removing the fear of contracting the disease, which has been a most powerful safeguard to those who have been taught its dangers, but they advocate it in the spirit of true physicians whose highest aims are to protect all humanity from any disease, foreseeing that, by such prophylactic measures, the coming generations of all nations will be spared much sorrow and suffering.

From these scientific facts we can gain much in simple means in the prevention of infection. Dentists who are working in infected mouths every day cannot protect their fingers as can the physician with rubber gloves. They therefore must depend upon antiseptic precautions in the form of solutions before and after operation. A prophylactic precaution which is demonstrated scientifically worth while, is the application of calomel ointment well rubbed in before beginning work in the suspected mouth. This will, without question, furnish the best protection to the cracked condition of the skin around the finger nail, the most common location of infection and extergenital chancre.

Results in systemic treatment of the disease with our present knowledge, are still most uncertain, yet far more certain than even five years ago. The patient is treated early with drugs that in experiments with animals have controlled and cured the disease. The symptoms all disappear, the patient goes on through the average length of life with no further manifestations of the disease. Then again we may give the same drugs, at the same stage of the disease, the same duration of time, discharge the patient, clinically cured, and in ten or twenty years later, a parasyphilitic condition develops. The cure of syphilis, then, does not depend upon any one drug, or the salts of any number of drugs, given any length of time, or administered in any one or all of the approved ways; but upon nature's means of resisting this disease, on the part of each individual patient. The development of antibodies, nature's protective substances, are nature's means of preventing the organism and its toxins from attacking vital cell structures. Just what are our effects upon nature's efforts in the means we are employing, especially in administering drugs, is a most important problem in the successful treatment of this disease.

Animals infected with the disease can be treated, symptomatically cured, then killed, or other animals may be inoculated from the infected animal; or they can be re-inoculated, and by such procedure ascertain what has been the effect of different treatments in the cure of the disease. Mercury still holds first place in its action on the organism and its virus; arsenic, second, iodide of potassium, third. Animals that have been infected and re-inoculated, after treatments have been given, are considered cured, or syphilis free, and further, in second inoculation, the sore, the seat of inoculation, is all that is manifest of the disease. No secondary symptoms are presented, which demonstrates a partial immunization, brought about by the first infection, and the immunization continues after all active infection of the disease disappears, as in the vaccination for smallpox.

Further research in the study of the blood changes of the syphilitic, as in the Wasserman test, may make this important phase of the disease clear in an accurate demonstration of the antigens, in other words, when we can determine for our syphilitic that he is syphilis free. This brings us to the third and more recent advancement in this disease.

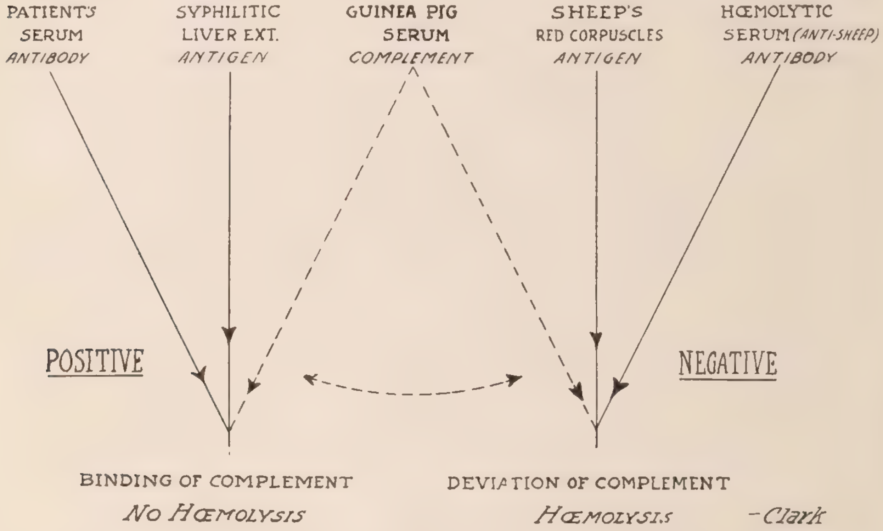
The recent demonstration of substances in blood sera from certain diseases leads us to accept the presence of such substances as positive indicators of the disease due to a specific cause. Positive reactions to the Widal test, Tuberculin, or the Wasserman test are in their specific application very important links of diagnostic evidence in the chain of manifestations of their respective diseases. These tests and others of a laboratory nature today comprise the source of the best scientific evidence to obtain a correct diagnosis, especially in doubtful cases.

Among these confirmatory diagnostic agents, the Wasserman test, when applied to cases of suspected or doubtful syphilitic origin, is, without question, one of the most important. This test gives a positive reaction in from 90% to 95% of untreated secondary syphilis, about 50% in tertiary syphilis, and a very much smaller percentage in latent syphilis. The reaction, therefore, when most needed as a diagnostic means, is shown in about 50% of positive syphilitics. With the thousands of cases that have been carefully subjected to this test, no reaction has been obtained in the non-syphilitic, with but a few exceptions, such as sleeping-sickness, yaws, leprosy and scarlet fever. These exceptions do not decrease the value of the test, because of the ability to easily exclude clinically the diseases mentioned.

The time has come when we, as physicians and dentists, must become familiar with the substances in the blood that enter into different reactions which are being commonly employed in this and other reactions, for they are essential in the great field of modern medicine dealing with the process of immunization.

The Wasserman test, upon which we will briefly outline, depends upon two systems, a bacteriolytic and a hemolytic. These two systems are necessary to measure and observe the phenomenon,—fixation or deviation of complement. The (a) or bacteriolytic system consists of three factors, namely, 1st, antibody (patient's serum); 2nd, antigen (syph. ext.); 3rd, complement (G. pig serum). The (b) hemolytic system in turn consists of three factors, namely: (5) antibody (hemolytic anti-sheep rabbit serum); (4), antigen (sheep's corpuscles), and (3) complement (G. pig serum), which is common to both.

1st, the patient's blood is drawn, the serum separated and heated at 56° C. ½ hr.; the 2nd factor or antigen is an alcoholic extract of liver from stillborn syphilitic infant; 3rd or complement, is the fresh clear serum from a normal guinea pig and is common to both systems; 4th, hemolytic antigen or sheep's blood corpuscles, are obtained by drawing a quantity of sheep's blood into 1% sodium citrate in salt solution, centrifuging, decanting, taking up in salt solution, centrifuging, and again taking up in salt solution and centrifuging. The thoroughly washed corpuscles are then diluted in salt solution 1:100; 5th factor, or hemolytic antibody, is secured from blood of rabbit which has been immunized to sheep's red blood corpuscles by 5 injections at intervals of four to six days, and then inactivated by heating at 56° C. ½ hr.


PATIENT'S SERUM ANTIBODY
SYPHILITIC LIVER EXT. ANTIGEN
GUINEA PIG SERUM COMPLEMENT
SHEEP'S RED CORPUSCLES ANTIGEN
HŒMOLYTIC SERUM (ANTI-SHEEP) ANTIBODY
POSITIVE
NEGATIVE
BINDING OF COMPLEMENT
No Hœmolysis
DEVIATION OF COMPLEMENT
Hœmolysis
-Clark

The factors of the hemolytic system are first standardized by determining the amount of complement (3) necessary to reactivate one unit of antibody (5) sufficiently to liberate the hemoglobin from one unit of antigen (4) in ten minutes at room temperature.

The antigen in the bacteriolytic system is in turn standardized to the units used in the hemolytic system by using sera from a known positive syphilitic and a known normal.

Having now the material for making the test, we are ready to put the five reagents together. One drop of the suspected serum of the patient, 1 unit of complement and 1 unit of antigen are placed in one tube. Another tube containing 1 drop of positive syphilitic serum, and also one containing one drop of a known non-syphilitic serum with units of the other two reagents in each are placed together. By so doing, the patient's serum is controlled by a positive and a negative control serum. No reaction that is not so controlled can be trusted for accuracy. These sets are placed in an incubator for 20 minutes, after which time 1 unit of each of sheep's corpuscles and hemolytic serum are added to all of the tubes which are then allowed to stand at room temperature 10 minutes. If an antibody be present, the complement will be fixed, so that when the red blood corpuscles and the hemolytic serum are added there is no complement to unite with the corpuscles and the serum, therefore no hemolysis takes place. If no antibody is present the complement is not fixed, and is therefore free to react with the hemolytic serum of the rabbit and the corpuscles of the sheep, and hemolysis takes place, a check off on the test being observed in the positive and negative controls.

After considering the substances which enter into the Wasserman reaction, the manner in which they are obtained, the standardization of each and the constant deterioration of many of these reagents, one is readily convinced that the test is most difficult. It requires a skilled technician, who is versed in blood work, and a well equipped laboratory. Months are required to become skilled in each step of the test. The guinea pig serum containing the complement must be fresh, which means every twenty-four hours, the hemolytic serum obtained from the immunized rabbit can be depended upon for an indefinite period only if kept in an ice chest. The red blood corpuscles of the sheep begin to disintegrate and are useless in three days. It is therefore a most extraordinarily complicated procedure, and expensive, due to the, as yet unavoidably unstable, ingredients.

The original Wasserman reaction, with a number of recommended modifications, while laborious and complicated, is reliable as a general diagnostic measure, but unfortunately its application is at present limited to the larger medical centres.

Many investigators have sought to simplify Wasserman's method, so that it can be generally applied, and while we have as yet none that will, stand the test for accuracy, we have reason to believe that practical simplifications will be perfected in the near future.

The serum of the syphilitic contains, according to experiments of many investigators, an excess of globulins as compared with normal sera, and those of most other diseases. This fact has led many to attempt to precipitate these globulins by various chemical means so as to be of diagnostic value, either in quality or quantity of the precipitants formed. Those who have exhaustively compared the precipitation reaction with the fixation of complement reaction are of the opinion that while one may become skilled through the extensive use of the precipitation test, it is impracticable for general use in the hands of the physician who seldom needs to employ it. The precipitation reaction, while simple, is very delicate, and cannot be considered as reliable in the doubtful case where an accurate test is most needed.

The author has tested 428 bloods with several reagents recommended by various workers in the precipitation test, and with a soluble salt previously reported by him. This reagent, Taurin proved to be the most accurate. It is white, crystalline, soluble bile salt and when used in different dilutions precipitates the globulins in larger quantities, in shorter time, and results in a precipitate of a different character, than any other substance as yet employed. The sera examined by this test were numbered with no knowledge of whether the blood was or was not syphilitic, and the reaction verified by the history of infection, or most often by actual objective clinical symptoms of syphilis.

The author's experience with Taurin leads him to think that it is a simple means of strengthening the diagnostic evidence in doubtful, clinically manifested cases. In summing up the reports of 150 skilled laboratory workers on the Taurin reaction, the evidence is that the casual worker's interpretation of the precipitate is not accurate or definite enough to be relied upon.

The precipitation reaction in syphilitic blood has been demonstrated by Noguchi, Neubauer, Solman, Porges, Elias and others. Noguchi precipitates the globulins in the spinal fluid of the syphlitic with butyric acid. If the serum so tested is normal, there is slight, if any, opalescence; but if syphilitic, a prompt cloudiness appears, and it soon becomes flocculent. The results reported by Noguchi have compared well in accuracy with those of the original Wasserman, and his reports have been confirmed by Fox, Dr. Santos-Saxe and others. This test, while far more simple than the Wasserman, presents some objections, viz., that of obtaining the serum from the spinal canal, and also the very disagreeable odor of butyric, making it impracticable for office work.

Still another type of reaction dependent upon the increase in globulins content is a color test reported by Schurman. We were unable to confirm his findings, but feel that such a test has promising possibilities. The author has done some preliminary work with several color reagents singly and in combinations, but as yet without success.

At present, the serum diagnosis of syphilis cannot be considered perfected; yet much disputed diagnostic evidence is now considered reliable. Its assistance is of inestimable value in differential diagnosis of the obscure, latent syphilis, especially of the nervous system, where no history of positive clinical symptoms of the infection is known.

Early diagnosis means weeks of early treatment and with vigorous early treatment the duration of the disease is materially shortened and the percentage of cures is accordingly larger. If the Wasserman reaction can be obtained at an early period of general, systemic infection, coupled with the finding of the specific organism, we have not only made great advancement in the early diagnosis of this disease but also in its control. This evidence can be considered only clinical and yet without definite proof. The most important value of the Wasserman reaction may not be that of diagnosis. If we can prove after continued negative reactions of a patient's serum, that the patient who has been afflicted with the disease is entirely free, the test will become of still greater value to patient and physician.

Only by carefully testing many sera for a long period of time can this be accomplished. Many investigators are now maintaining that a patient's serum giving a positive Wasserman reaction may become negative, after vigorous treatment with mercury. They also maintain that a positive reaction means positive syphilis and further treatment. Much time must be spent on further study of syphilitic sera before the governing of our treatment by reaction can be accepted as absolute. Just how much power of resistance the average normal individual possesses against this infection at a certain age, and just what the effect of our specific treatment is upon the infection, or upon nature's means of combating the infection, is yet a vast unknown field. Why some patients run such an apparently mild course, while others are most severe and destructive under the same conditions and treatment, can only be known when we are able to determine the value and cause of individual resistance to this specific infection.

If again we can be guided by the reaction, in our management and treatment of this disease, society and the coming generations will be inestimably benefited. We can then advise our patient not only regarding the safety of marriage, but will be able to state whether he can have healthy children, if we have a definite practical means of knowing when he is cured. The only absolute proof we now possess of the surety of our patient being syphilis free, is that he may become re-infected. If all patients that show the reaction still have active syphilis, we are curing only a small percentage of our syphilitics. Yet on the other hand, if our patient can be reinfected, we can consider syphilis curable.

In the latent stages of syphilis the patient shows some proof of immunity. Lesser estimated the presence or absence of the reaction, tabulating them by years, since the patient became infected. The reaction was present in about this ratio: The first two years it was found in over 70%, from the third to thirteenth year about 50%, from the thirteenth to thirty-fifth year 11%, and only rarely after the thirty-fifth year of infection. He also reports that in 86% of those giving a positive reaction, marked decrease in the number and extent of the positive reactions is so rendered by treatment. He maintains that the longer the infection has existed the more likely are relapses, and the more constant is the reaction positive. The earlier the treatment, the longer continued, the larger is the percentage of negative reactions that continue negative.

Citron concludes from work on a large series of cases as follows: First, the constant finding of the reaction indicates positive active syphilis;

second, that poorly treated or untreated syphilitics show the reaction after many years; third, if the reaction is present, there is active syphilitic infection, and treatment should be continued.

Blaschko has also reported much in the systematic examination of the serum, before, and during various methods of treatment in the different stages of the disease. He believes, and maintains that the treatment should be continued as long as a positive reaction is obtained, and that repeated testing of the serum after it has become negative is necessary. If the reaction reappears treatment should be given even in the absence of all other symptoms of the disease.

CONCLUSION

While for centuries many hundreds of causes of syphilis have been heralded, none have thus far stood the test of Koch's Law.

The spirochaeta pallida, a flagellate-like protozoa, is found in all lesions and stages of the disease. The organism is capable of producing the disease in animals and is recovered in organs of the infected animals.

The isolation and the growth of the organism in pure culture has not as yet been accomplished.

The difficulty in isolation and growing of the organism makes it most difficult to differentiate the spirochaeta pallida from many other common spirochaeta, especially those found in the buccal cavity.

Examination of serum from suspicious lesions by the Darkfield illumination affords an easy and quick means of detecting the spirochaeta pallida in its active state.

The shape and motion can readily be detected by this means.

The organism can be kept alive for days in abundant collected material for media, at body temperature, but die rapidly after leaving the body.

Animal experimentations demonstrate that all lesions harbor the organism, and are capable of producing the diseases by inoculations. Inoculations are more successful when the virus does not enter the blood stream.

The efficiency of drugs in the control and cure of this disease are now scientifically known.

Mercury holds first place in the prevention, control and cure of syphilis; arsenic, second, and iodide of potassium, third.

Prophylactic precautions for the physician and dentist are now scientifically made definite.

Demonstration of the presence or absence of protective substances in the blood of the syphilitic, as in the Wasserman reaction, is of inestimable value in diagnosis and treatment.

The Wasserman reaction shows a positive reaction in from 90 to 95% of untreated secondary syphilis.

A negative Wasserman does not always mean the absence of syphilis, as a small percentage of syphilitics fail to show the reaction.

Two or more Wasserman tests should be run in all doubtful cases. Every reaction being carefully controlled by a known positive syphilitic blood and a known non-syphilitic blood. No test can be depended upon for accuracy that is not so controlled.

Simplifications of the original Wasserman test are sure to be forthcoming, and time is only necessary to prove the accuracy of many now advocated. Further research in the testing of the blood of the syphilitic, before and during treatment in all stages of the disease, will without doubt, give us definite means whereby we can tell when our syphilitic is syphilis free.

To L. T. Clarke, B. S., I wish to express my thanks for not only the chart, but for valuable laboratory assistance.

DISCUSSION.

Dr. C. H. Oakman: One thing in the paper that struck me as very significant was that the spirochaeta may be retained in the filter and the virus which passes through the filter has the power of producing syphilis by inoculation. If you have the spirochaeta as the specific organism of the specific disease, it seems to me as though it would be necessary to introduce that organism, whether subcutaneously or otherwise, in order to produce the disease. If the filtered specific organic extract when applied to the conjunctiva might give a reaction similar to the tuberculin test, that seemed to me the strongest point of the paper, and I shall be glad if Dr. Varney will speak of this in closing.

As dentists, I think Dr. Varney has given us a very good preparation for us to use daily, providing we operate in mouths that are syphilitic or suspicious, and that is the calomel ointment on the hands. We all have hang nails and more or less abraded hands in spite of all we can do, and I think it should be well for each of us to have a bottle of this ointment.

It was my understanding some years ago that a syphilitic who would contract syphilis for the second time, or a person who had had syphilis and was supposed to have been cured, in a few years later he could develop again the primary sore. I was taught to believe that but very few cases were ever absolutely cured where inoculation has occurred, but as Dr. Varney states here tonight, if you can by the Wasserman test be satisfied that the patient is syphilitic free, it would stand to reason that he must be inoculated again to have it.

In researches of Rockefeller Institute, New York, there is a very interesting article printed in the *Journal of Experimental Medicine*, the March issue of this year, which is well worth reading. From what I can find about the Wasserman reaction, it seems to be a most difficult reaction to obtain, as the essayist has already said. I understand it takes some two hours to make the test after the solutions are all at hand, but the technique is so exacting that it takes an expert laboratory man and bacteriologist to perform.

Syphilis, from the dentist's standpoint, is somewhat perplexing to most of us. I once had a dentist say to me, while talking on the subject, "It's strange none of my patients ever seem to have syphilis, and I have been in practice now eight years and have never seen a case." His patients were made of different clay from most of ours. He had never seen a case of syphilis in the mouth. The fact is, he had seen many syphilitics but never recognized them. We know syphilis is a disease of civilization, it is often spoken of as a disease of civilization. We know what ravages the disease has caused among the Indians and negroes, where its devastations for ages have been tremendous.

I think Dr. Varney's paper and papers along this line would be a sermon to young men generally, and I also think the clergy and all laymen would be benefited by hearing such a paper on this subject. We have begun to think that it is almost a crime to go to communion, where perhaps four or five hundred people drink from the same cup. The common drinking cup on trains and at watering founts in public buildings are a menace to public health and should be speedily abolished.

Dr. N. S. Hoff: I am going to take the liberty tonight of doing the very thing that as an editor I do not allow other people to do, and that is to compliment the essayist, and I do it because I think it is fully justified in this case. I want to say that while I disclaim any particular knowledge of this disease, in a general way, I have followed everything that has been written from a dental standpoint upon this subject, but I have never seen this subject presented in a way that has so impressed me as in this paper that has been read to us tonight. It is a scientific presentation, and for that reason it may not appeal to us as practical, but I believe that if you have carefully listened to this paper, and if when it is printed you will read and study it, you will find in it the basis for definite knowledge concerning this disease, a knowledge which will enable you to value every article that you ever see written upon this subject. After I received this paper I read it through, and I became so much interested in the subject that I located in our journal literature several articles that I remembered having seen on the subject. These articles when I read them in the first place seemed to me quite uninteresting as they gave only the classic symptoms of syphilis and the manifestations that we ought to look for in the mouth, in fact a formal statement of the etiology of the disease in general terms from a clinical standpoint. I did not understand them and they did not appeal to me. But as I re-read them in the light of this paper and this presentation they took on an entirely new meaning to me. I believe Dr. Varney has read before this society tonight the best paper that has ever been presented on this subject before any dental society. It is a paper which will have a permanent educational value for us, such as few other papers upon this subject have ever had that have come to my notice. I presume our medical men may be entirely familiar with these facts, but this paper places the whole subject on a basis where any intelligent man, whether physician, dentist or layman can comprehend the subject. We shall also be able to intelligently comprehend what we read upon this subject from other writers who write wholly from the clinical standpoint.

I want to say a few things from the dentist's standpoint about this subject. I cannot of course discuss this presentation of Dr. Varney's, because I am neither a scientist nor a physician.

Dr. Oakman has already said that this paper practically means that the dentist is to introduce into his practice the diagnosis of this disease as it may come in his hands. We have neither the laboratory nor the skill, as Dr. Varney has said, to do this work. We cannot be expected to do it. In the first place, we would have great difficulty in talking of anything of this sort to our patients; they would resent it as impertinent. They will say: What right have you to be suspecting me, or what right have you to be doing such a thing as raising questions as to our conditions or circumstances, even though indications warrant them? We all know how sensitive people are about this disease. If they understood the subject scientifically as Dr. Varney does, and if we all understood it from that standpoint, we should have no difficulty in discussing it freely with our patients and in so doing enlist their co-operation in spreading it to others. We not only have a right to discuss such matters with out patients, but even go to the extent of making researches to determine whether a patient was afflicted or not. As we have neither the skill nor appliances, and our patients are not educated to the point of permitting us to do things of this sort, it leaves us only one resort, and that is to fall back upon the specialist, the man who is intelligently doing this work. I am glad we have got such a man as Dr. Varney here in Detroit, and I trust that you men, whenever you have occasion to question a patient's condition on this subject, that you will do what you can to influence him in the speedy determination of so important a matter as this, not only for your own sake, but for the benefit of the public and the patient himself. It is one of the most interesting and important subjects that we can take up at this time. It is equally important with that of tuberculosis, which just now seems to be occupying the attention, not only of the medical profession, but of the laity as well.

The treatment of this disease, while it may be interesting to us as dentists, we have no right professionally to undertake, but that is no reason why we may not understand the therapeutics of this disease. There is no reason why we should not be intelligent about it. It certainly would be unprofessional and discourteous for us to presume because we knew that our patients had the disease, to prescribe treatment for it. It should be our business, and our pleasure, to refer patients of this sort to a man who is competent to treat it and understand it, and in whom we have the utmost confidence, to take care of it. This being the case, if we as dentists are not capable of either diagnosing this disease or treating it ourselves intelligently and satisfactorily, it becomes imperative when we are suspicious even, of disease of this kind, in any of our patients, to call their attention in some frank, free way to the fact that they should consult a competent person as to their systemic condition. We can do this without exciting any suspicion that we are trying to overstep the bounds of propriety of our own work. We can do this in a proper way, and it seems to me that it ought to be not only our pleasure but our duty to do this thing for the benefit not only of our patients, but humanity in general; and since it is a fact that, as Dr. Oakman has said, we as dentists are not sufficiently intelligent as to this disease, even of the manifestations of it in the mouths of our patients to recognize it by symptoms, which may be not very definite, or may be obscured and of such a character that we cannot differentiate them from other diseases. While we are in this condition as to our knowledge of symptoms of this disease, it ought to be at the same time one reason why we should be more careful as to how we handle all of our patients. We should use at least renewed precautions in all suspect cases. We are told that there are certain conditions in the secondary stage of syphilis where patients are most dangerous, when the infection is most likely to be transmitted by contact of instruments, in various ways, from one patient to another, and I have been always on the lookout for these cases. Of course, in the tertiary stage where there are pronounced manifestations that no man can overlook, there is no danger of any of us neglecting proper precautions, but many of the primary lesions are obscured in such a way that we perhaps do not notice and overlook them. In dealing with conditions of this sort only occasionally and not being wide awake to their manifestations, it is not much wonder that we do sometimes overlook them. I do not see how dentists can be expected to be able to diagnose these conditions with anything like accuracy when many times they are so obscure that even the practiced physician, the best of physicians, cannot determine definitely that it is a syphilitic lesion unless there is a characteristic destruction of the tissues.

Now this brings me to another thought that I want to bring to Dr. Varney's attention, as he, perhaps, being a leader in this subject, will be in a position to do for the dental profession a service that will be worth a great deal to us, and that is, in all of my history as a practitioner of dentistry, while I have had intimate personal relations with many physicians, and physicians of all kinds, men who are specialists in all diseases, but particularly in this disease, I never have had a physician write me a note or speak to me personally in regard to a patient that he knew I was treating, and inform me of the condition of such a patient. How many men in this room have had a physician do that for them? (Seven or eight hands were raised.) I am glad to know that there are a good many of you that have; it has not been my experience. It is considered by the physician that conditions of this sort are between the physician and his patient sacred, but that is no sufficient reason why, when it is known that in the dental chair there are so great opportunities for the transmission of this disease, that there should be no discourtesy on the part of the medical profession in conveying such knowledge in confidence, to a dentist who he knows is treating the patient that is afflicted in any stage, with this disease; particularly, if it is during the time when the disease is liable to be transferred by dental operation, or where the dentist himself would be liable to become infected with that disease. If physicians will take us into their confidence, as it seems to me they should, because of the fact that from the very nature of things we cannot become expertly intelligent on this subject, so that we can make these diagnoses on the instant when these patients present to us, it seems to me that the medical profession will do us an everlasting favor, and they will in that way also do something to prevent the spread of this disease, if it is being spread as many of the articles that I have read from time to time, have stated, by dental manipulation or by the use of dental instruments. I myself do not believe that the man who practices dentistry, with modern knowledge of antiseptic cleanliness, would spread disease of any sort through his instruments, if he is reasonably careful. If he is reasonably careful so far as ordinary hygienic and antiseptic precautions are concerned, he will spread no disease through the use of infected instruments, but it is possible, because however careful we may be, that some disease may be transmitted in this way, and we may be responsible for dreadful results when really the innocent and unintentional instrumentality for doing so. It seems to me that the medical profession owes us something in this respect. Medical practitioners are in a position to know of these conditions, and when they know that patients of theirs are suffering in this way and they are at the same time being treated by dentists or oculists, or anyone else, where they would be likely to contaminate our instruments, or be the means of spreading the disease to some other, it seems to me that we ought to be considered in this connection, and I hope that Dr. Varney, when he is speaking of this subject to his medical confreres will not forget that point. Every man, optician, oculist or any other man who is doing anything outside of the regular medical work, and who is not supposed to be an expert in these lines, ought to be considered in connection with this matter.

Now, as to the means which the dentist may adopt. I was in hopes that Dr. Oakman would take up this part of the subject and tell us how we may avoid being infected ourselves in handling patients. I know that he must have had more experience than most of us in his surgical work. How is it possible for the dentist to sterilize not only his hands in preparation for operations upon people generally, and particularly upon suspicious cases, and how is it possible for us to sterilize our instruments and to avoid any possible inoculation of our patients in this way?

I am in the habit of sterilizing my instruments after every operation of every kind, and most of us do that thing carefully and as religiously as we know how. I depend largely upon 5 per cent solution of lysol as my sterilizing agent preliminary to a boiling water bath as a final cleansing and sterilizing agent. These two agents it seems to me are sufficient. Where I have cases that I am in doubt as to the efficacy of this method of sterilization, and my instruments are capable of being heated, of course I employ dry heat direct, but if we do this with all of our instruments, some of them would be ruined. In extreme cases I have resorted to the use of formaldehyde and alcohol, a 25% solution of formaldehyde in alcohol with a little borax to prevent rusting.

The method of sterilizing the hands that has been presented to us by Dr. Varney with calomel paste is perhaps all right for emergency cases, or for cases where we know we are liable to inoculation and are dealing with an extreme condition; but for the ordinary sterilization of the hands it would be too severe on our hands. I do not believe all of us could use such an ointment as that because it would destroy the tactile sense in our fingers, our nails would become all broken up and hard and crack, so that our hands would not be sightly to put into anybody's mouth. It would be out of the question for us to use agents of that kind, it seems to me.

I have sometimes tried to sterilize my hands with a bichloride of mercury solution, but it is very hard on my hands, and I know in general it is not an agent that you can make use of, because we must have our hands in a presentable condition when we are handling our patients. We must not destroy the delicate, sensitive touch, which really is essential to the handling of our instruments in a definite delicate manner, so that any agent that would do this and would injure our tactile sense we cannot use at all. Of course differet persons can use different things. The cuticle of some hands will stand sterilization that others will not, but I find that the liquid soap used with hot water is about as good a sterilizing medium as I can find. It keeps my hands in good condition and I feel confident that it is effective and sufficient for my purposes. Sometimes I use a solution that Dr. Spalding gave me, or recommended, a solution of phenol in rose water and glycerine—I do not remember just the formula of it now. It is an excellent thing to use, not only to sterilize your hands but it keeps them in good condition, keeps them soft and pliable, and I feel with the use of this soap and an agent of this sort I am protecting my patient and myself as well as I can under the circumstances. I wish Dr. Varney would tell us whether it will be sufficient in those extreme cases, where there is definite infection, and where the virus from this infection is so virulent that even if it contained none of the spirillum, would be sufficient to infect. But this calomel ointment, I am afraid, would not be an agent that we could use for any great length of time; it may be for an occasional and severe case the one that we would be glad to use.

Dr. C. H. Oakman: Dr. Hoff suggests that calomel might not be tolerated by the hands, but I don't really know how it will act. I am going to try it, combined with lanolin, which is not as presentable as some things, and I would think that cocoa butter might be used instead. I do not think any preparation for sterilization of the hands would be just the thing when it contains glycerine, for we know that glycerine will extract the moisture from the skin and consequently dry up the hands. Personally, I can use bichloride of mercury, 1-3,000, year in and year out, for the last fifteen years I have used bichloride 20 or 30 times a day.

How many dentists religiously disinfect their hands before or after every operation? I do not think soap is sufficient, because about the strongest antiseptic you can get in the soap is peroxide. You may have other ingredients, but I doubt, from my experience at least, if you can use the stronger antiseptics combined in the soaps. I possibly could stand, as I said, bichloride; I do not know how it would be with most of you. I know dentists for years past that have never used an antiseptic on their hands, nothing more than soap. Now that does not seem to be a fair deal for our patients, as we are working in syphilitic mouths all the time. I doubt if any of us spend a day without running across some syphilitic cases; I know there is not in my office a day that I do not see three or four. It may be that cases of syphilis are sent to me more frequently for treatment of the gums. We know that patients affected with syphilis will almost invariably have a pyorrhoeal tissue; that in my experience is almost always the case, and I think that physicians should not send these patients to us in the primary stage. Many dentists say, I would not work for patients in any stage. If we do not, we are not doing our duty in the healing art. I am willing every day to see as many syphilitic patients as I can, because the relief you give them and the healthy condition you put their mouth in, and the gratification you get out of it is well worth the while. I think that Dr. Hoff struck a keynote when he said the physician should have confidence in the dentist. There should be some way that he may communicate this information to us without a breach of professional etiquette. We are then forewarned and are more careful, and are more likely to use instruments set apart for that purpose and used for no other purpose. I think the physicians are learning, at least the better men, to treat dentists with more consideration. I will just relate an incident to show what the dentist might be up against.

A patient that I was treating for an ordinary dental lesion appeared in three days with a chancre on the upper left lip, about the size of a white bean, and she came again in a few days and it had that hard chancre appearance. I was a little suspicious and advised her to go to her family physician. This was some ten years ago. (I would have sent her to a specialist should it occur now, if I had anything to do with the sending.) What I got for my pains was a terrible roasting. I asked, "By the way, who was your family physician?"

"Dr. So-and-So."

"I would go right to Dr. —— and ask him what he thought of this, and he may call me up and talk with me."

The first thing the girl said was, "I have been to the dentist, and I think he stuck an instrument into my lip." Remember, it was only three days, and I knew I had not punctured her lip with an instrument. He said, "That is the way dentists do; I have a lot of patients come with things like that on their lips."

She became frightened, called up her beau, and he came to see me, very much excited and wanted to know how this occurred. I put on my hat and coat and went and hunted up Mr. Physician; before I went I 'phoned, to be sure he would be in, but he would not see me. The girl came in about six weeks later and had some of the secondary symptoms, from what she said, and kept on with the treatment. Later on her finger nails became affected. I knew that I was blamed for the condition, and said to her, "Why don't you go to a good doctor?"

"Isn't he a good doctor?"

"I don't know for sure, but you had better go to a man who is well versed in this work." He lost the patient, and later I was vindicated; both she and her beau agreed that I could not have done it, but it goes to show what an unpleasant position you might be placed in, so when you have these suspicious looking sores don't put off the time of sending them to some good physician or specialist for treatment.

Dr. J. M. Thompson: I would like to ask Dr. Varney if he thinks that all cases of pyorrhoea alveolaris are an evidence of some syphilitic taint somewhere. Dr. Curtis, of New York, claims that all inflammations of this class are due to syphilis.

Mr. Clark: From some of the questions asked while I was demonstrating the spirochaeta at the microscope it seems that the distinction made between the organism demonstrated and the antigen used in making the serum test is not clear and is here rather confusing.

This serum test deals with the products of the organism in the system, and not with the organism directly. Dr. Varney spoke of the antigen, but did not explain what the antigen really is.

An antigen may be a suspension of an organism, or it may be the toxins or the poisonous products of that organism. In this case we use the extract of a syphilitic liver, which extract does not contain the spirochaeta; it simply contains the products of the spirochaeta, and here we are dealing with the products of the organism and the products or bodies in the serum produced by the system to counteract the effects of the invading organisms.

Dr. Lauppe: I would like to ask how long is it necessary to leave the mercuric paste on the hands—three hours, did I understand you to say, or one hour?

Dr. Varney: One to three hours after inoculation, but if the paste was on before any inoculation, in any suspected case, there would not be any infection likely to take place.

I am sure I am very much gratified by the liberal way in which you have taken up this subject. I realized that it was vast and a good bit of it was new, but yet I felt that, as Dr. Hoff has stated, if I could give you something that was embodied in the recent research work of this disease that you would be able to apply it clinically, and in your discussion you have proved this.

In regard to the virus, or statement in regard to the virus as producing the disease, when the organism was not able to pass through the filter, that is an experiment of Janckos and he really does not explain how that comes about, but it is possible for the toxin to produce the disease. We produced the disease in a number of animals from the filtered virus that passed through the Chamberlin filter.

We could ask many questions, because this field is one recently opened up, and there is a vast amount of it, as you can readily see, that is yet unexplored, and a vast amount of research must be further gone over before many of the questions that arise can be definitely answered.

Dr. Oakman referred to the Taurin reaction, or precipitation reaction, which I was especially interested in and which attracted my attention a year ago in the examination of a number of bloods, not only of positive syphilitic patients but doubtful syphilitic cases, both in private and clinic practice in one of your larger institutions of the state. As I stated in my paper, the blood examinations with this test were carefully controlled and all bloods were examined by number, with no knowledge of the clinical history. A large percentage of them were examined in that way, and the result of this precipitation reaction, after it was read, was confirmed by the history of the case. In this way the worker eliminates the danger of being misled or going off in a wrong direction which might occur to the enthusiast. I was attracted by the character of the precipitation, flocculent precipitation taking place in shorter time than normal in normal sera and larger quantity, and I feel, with my experience thus far, that the Taurin in precipitating this globulin in a syphilitic serum is of some value and is of great assistance to me daily in connecting one more link in the chain of evidence in arriving at a diagnosis. I would not make a diagnosis on the precipitation test alone in a doubtful case. I would not make a diagnosis on one positive Wassermann reaction in a doubtful case; I would run two or more at different intervals of time, we will suppose, from the first reading, if the case was one of doubt as to infection, with no history.

Dr. C. H. Oakman: What percentage of cases of tabes can you detect?

Dr. Varney: Between 50 and 60% of tabes dorsalis shows positive reaction with the Wasserman test, but they are considered now by internists to be 100% syphilitic in their etiology.

Dr. Oakman touched upon a very important field which I did not have time to take up, and that is, the treatment of the gums in the syphilitic. It is a routine practice of mine, before starting the patient upon any treatment, to examine thoroughly the condition of the gums, to detect, if possible, any recession or pyorrhoea condition. If such a condition exists the man who starts treatment before these gums are cared for will be handicapped in controlling the disease. It is not mercury that causes the teeth to loosen and fall out. One of the most troublesome traditions that I have to overcome is, ''Mercury gets into my bones and my teeth get loose,'' they say. It is not mercury; it is the condition of the mouth before the mercury was given. Many of my patients are being sent to the dentist for the treatment of the gums, putting them in as perfect condition, before any mercury is administered and they are then carefully instructed as to the importance of keeping the mouth perfectly clean during the mercurialization.

Dr. Lauppe: In case the gums are healthy and the treatment is that of mercury, will the teeth get loose and gums become inflamed from salivation?

Dr. Varney: No, not unless the case becomes salivated and that is only transitory. Treatment may be vigorous if the mouth is in a healthy condition.

Dr. Hoff, I think, has brought up one of the most important phases of interest to us all, that of the physician notifying the dentist of the nature of the infection in that mouth. The patient may not have an evidence of any syphilitic manifestation in the buccal cavity; one may not mistrust a patient in the least. He may come from one of the best families, perhaps a pillar of your church; in fact, we know that this disease is no respecter of person, it is in all walks of life. If I have impressed upon you the importance of better caring for yourself, to prevent any possible chance of infection and then of transmitting it to patients, which I think is far less risky than your own possible inoculation, I will feel that something has been accomplished.

I mentioned in my paper the scientific fact that the organism does not need to enter the blood streams; all that is necessary is that it enter a moist weeping fissure of the skin; in that case, with the least bit of serum one is liable to have an initial lesion. If you were in a position to see the number of cases that have been innocently infected in our city you would realize how keenly I feel the importance of subjecting every mouth that has the slightest break in the mucous membrane, if it is only a crack in the corner of the mouth, to further examination and suspicion. Look out for those slightly reddened smooth placks on the tongue where the epithelium is gone; look out for those little gray patches in the mouth that the patient has not noted because they are not sensitive, and if the patient's attention is called to it, they have ''canker sores,'' that patient should be under suspicion without conveying any of your knowledge about the diseased condition. The forefinger of the right hand is a most likely focus for infection, and your profession are most often infected there by not careful sterilization of the hands before and after operation, from patients who have no evidence of the disease.

In regard to calomel paste, I mentioned that because I thought I ought to put something in my paper that could be applied practically and that has been proven, scientifically, by a number of men, Metchnikoff and Neisser and others, that a preparation of one part calomel to three parts of lanoline, will abort the disease, even after inoculation it will destroy the organism. If you have suspected cases and rough epithelium about your finger nail calomel paste should be applied. I would not care what it tasted like to that patient. I think the lanolin is very protective to the epithelial layer and does not cause hardening of it. Apply, of course, only when you have an area on your finger that might possibly allow the entrance of the infection, and when you have a suspicious mouth to contend with.

I mentioned the fact that the organism lives only a short time out of the body, and that accounts for the fact that no more of us are infected daily. The organism dies very rapidly, and is not transmitted from common articles that we use as often as we might suppose. Lysol, I think, has sufficient disinfecting features to destroy the organism directly after any operation unless mouth fluids are allowed to dry or enter the cracks of your hands and remain there for some time; most solutions will take care of them. I really think that potash or soda soaps, that ether soaps, really answer most purposes in disinfecting, unless the patient's mouth is suspicious. Another soap not mentioned tonight is iodide of mercury soap, although rather harsh on the epithelial layers if used often.

Dr. Thompson asked the question as to whether pyorrhoea is an evidence of some syphilitic taint. It is difficult to tell how many of us can go back three generations in our own family history, without some taint of syphilis. During the revolutionary time the disease was most prevalent in Europe, and it was laid to the Americans' door that the British soldiers brought it home ,and you know that in France it was a national question at one time, so prevalent was the disease. Kings and queens and the royal family had syphilis, so that, as I say, it is not possible to go back many generations without getting some taint of syphilitic manifestations, perhaps, in our own makeup, so that these diseased conditions of the gums may be, a good many of them, due to syphilitic infection, and we cannot get much absolutely accurate evidence to prove such a statement.

I thank you.

A REVIEW OF BRIDGEWORK

By C. J. Grieves, D. D. S., Baltimore, Md.

(*Continued from page 789, September Dental Summary.*)

DISCUSSION.

Dr. D. A. Allen: This question of bridgework has been a bugbear to me ever since I commenced to do this kind of work. I never got it so that it was satisfactory to myself after it was in the mouth. I could make a piece of work that looked like a nice piece of jewelry, but it seemed to me that there were so few places that I could put it in and have it remain in a sanitary condition. I think his method will bear investigation by all of us. I mean to know more about it before Dr. Grieves goes away. I think he has been working on the right line and has gone into the subject deeply, and evidently knows what he is talking about. He has gone into it in a scientific way and has proven everything and held fast that which he found to be good. Of course every man has his own peculiarities in the way of working and I am no exception to the others.

There is one little point that the doctor makes to which some of us might take exceptions: "The salient point lies not so much in the form of the abutment as in the fit when completed. Any form is O. K. if accurately fitted." I agree with the doctor as far as mechanical dentistry is concerned. Bridgework is operative dentistry of the highest degree, but it has always seemed to me that working in the mouth any more than was necessary to see that you had a correct fit was using your patient for a work bench and the stump for a mandrel to build the crown upon. Whatever method you use, however, be sure that you get it to fit. That is one of the main points that is neglected more than anything else in this line. I have been conceited enough to think that I could do nice work, and I have been terribly chagrined at the fit beneath the gum when I had occasion to take that work off. You cannot be too careful about these things.

In the method of saddles, I am sorry to say that I am behind the times, and I presume there are others who have gone on in the way that we have been taught, or in the way that we have learned of our own accord from our own experience, and we have not investigated these things as Dr. Grieves has. I think there are a great many things in this paper that we can make use of.

Dr. S. M. Weaver: I wish to compliment the society in being able to have Dr. Grieves here, and the privilege of having such an excellent paper. He has taken the scientific part of the subject and gone into detail in a better manner than a great many of us have an opportunity.

The staining of the different metals as they go under the gums is one of the most important features of the entire paper. I will not attempt to discuss the pathological part that he has so ably taken care of. I will merely take up a few of the salient points as they come to me. One point in bridgework is the destruction of the pulp. It is my practice never to destroy a pulp in a tooth unless deemed necessary, as in cases of excessive grinding to parallel the abutment. I do not think it is necessary except perhaps in ten per cent. of the cases. If the tooth is properly anesthetized with high pressure it can be ground down, but if not it is almost impossible to do it and do it properly. The trouble as I have found it is in getting the enamel removed from the tooth and a perfect truncated cone for an abutment. You cannot put a Mother Hubbard crown on a tooth without irritation and injury to the gingivae due to the ill-fitted band. We must also remove that enamel without injury to the gingival attachment. If the gingival attachment is cut, it naturally sags down and loses its grip on the neck of the tooth, and you will have a recessive gum tissue and ultimate decay.

Lately I am using a right angle bur and having the end safed, making the blades run out but dulling them on an Arkansas stone so we can run them up under the free gingiva. By getting a grip on the other tooth you can hold it perfectly still and can take the enamel off a tooth very easily, using the scalers to smooth it up a little, and you have as nearly a perfect abutment as possible. Do not allow the wheels to cut into the gum.

The only reason I do not like to devitalize every time is when you open a canal in a tooth you have as many *chances* of failure as you have roots. I had some X-Ray pictures taken of some very tortuous roots of molars and I discovered one thing, the teeth had been dried out for some time and almost every canal that was bent showed a canal opening right straight through the bend, emphasizing the *unknown* difficulty.

Another point deserving emphasis was the adjustment of the crown; it should be so adjusted that it can be burnished easily. My method of late has been to make a band of 24-k. gold and then allow my waxing to come within a short distance from the cervical edge of the crown. After the crown has been cast I have this pure gold band to reburnish in the mouth. There isn't any danger of it being disturbed and you can burnish it down just as nicely as you can burnish a gold filling. I have saddle bridges that have been on four and five years and the imprint of that bridge on the tissues was without any irritation. One of the most important parts is getting the dummy attached too close to the cervical margin of the abutment. I attach the dummy as high to the abutment as possible, because all bridges settle. If you have that perfectly free you will obviate a great deal of trouble. I am thoroughly convinced that the saddle bridge is far cleaner than the so-called self-cleansing bridge. You never took a bridge out of the mouth but that it was full of solder pits that catches the mucous; but with the saddle bridge you do not have any place for the food to catch, and you are not going to have any food there.

One point the doctor spoke of was where three or four loose teeth came out, instead of trying to clasp to these teeth and make a plate, if the teeth are cut off level with the gum and copings put on using some of the many attachments to get a support, you have all the good qualities of a bridge and it will hold the plate in place, and you will have a plate that can be kept clean. You lessen the leverage, and if it is cut off at the gum line you increase the strength of the tooth. It would be on the same principle as a fence post; if it is out of the ground a little way you can get hold of it and wiggle it around. That is the same principle worked out in bridgework. In our college courses if we had more teaching in the laws of physics and the application of force, it would be of great value.

The contour of the crown is of course one of the most important things. On the anterior crown work one of the most common faults in crown work is the skimming up of the linguo-gingivae, the lingual contour is ground off, that should be restored so the bolus of food would be glanced off without injury to the gum and the gingivae will keep right down on the joint and keep the joint sealed.

I wish Dr. Grieves had brought us a sample of his bridgework for I can always grasp a thing better if I can see it.

My rule is to plan the saddle according to the shape of the ridge. If it is an upper bridge I can carry the contour of the arch, without too much exaggeration I restore that with gold. The food when eating cleanses the tooth. The argument of men against saddle bridges is that there is too much of a space there that is uncleanly. If there are four teeth removed, the surface of that saddle bridge is not as great as the proximal surface of the teeth before removal, so that you haven't as much inaccessible surface under the bridge as you had in the natural mouth. But you must not have solder on that surface; it causes a pitting of the surface and a roughness due to oxidation and when you get roughness you get irritation. I set the bridge in gutta percha so it can be removed. I do not use any facing that cannot be removed. I set these in gutta percha and allow the person to wear them for two or three months, and as they settle you can grind them to place without irritation. After that is done you make a little die and swedge No. 500 platinum to that surface, and by allowing that platinum to come over the edge of the bridge slightly, it takes only a minute portion of solder to unite it. After the grinding you have a perfect continuous surface. I have tried to cast on platinum several times and after I got my casting out, I was never able to find the platinum.

Also in regard to oiling the bridges before setting. I take oil of cloves or liquid vaseline and cover the bridge. If you have it greased the cement comes off easily.

I have never been a student of porcelain bridgework. I never thought it was necessary except in a few instances. I believe with proper ingenuity a person can use the different kinds of porcelain facings and a cast gold basis and get better strength and as good esthetics.

Another cause why bridgework has been decried a good deal is the lack of operators skilled in dressing down the abutments, and I think if we would become aroused to the fact that unless we get them properly dressed we cannot get good results, we should become more careful and better operators.

Dr. M. L. Ward: I had intended to pay the best compliment I knew to Dr. Grieves by saying to him that his paper indicated that he not only was practicing but was studying bridge work, but since Dr. Weaver has gotten up here and said that he saves the pulps of the teeth that he uses as abutments for bridges, I am reluctant to do it. I do not like to say that Dr. Weaver is not practicing much bridge work. It is my firm belief, however, that the man who practices very much bridge work will lose some of his respect for the pulp. On page 4 Dr. Grieves says, "The pulp must be well protected or promptly removed." On page 10 he also says: "It is recognized that diverging abutment teeth mean, if perfect paralleling be obtained, oftimes sweeping pulp devitalization; pulp devitalization and clean root surgery without damage to the vital apical cementum and the peridental membrane are the very foundations on which modern operative dentistry is reared; while it may not seem desirable in perfectly normal teeth, the question resolves itself into first, whether we *can do* clean root surgery and *if we can*, next whether a few pulps are to be balanced in value to the whole human economy, as against the masticating powers of a large bridge."

That is about the whole situation. Many of the profession are not possessed of the necessary technique to construct good bridges but the larger percentage of them have a particular dislike for root surgery and allow themselves to be convinced that only a small percentage of it is successful. It would seem that the profession was extremely slow in grasping the real status of the pulp as applied to bridge work. We must grant that when the pulp is removed or when teeth become much calcified, or when anything else tends to increase or decrease the normal percentages of organic or inorganic matter in the tooth there is loss of strength. We must also grant that recent research work, verified by the observations of those making a specialty of the treatment of Pyorrhea, shows that the root of the tooth is better retained in its socket when the pulp is extracted. Now the question resolves itself into whether we want a strong tooth or a root which is better retained in the socket. There is no question that we should be little interested in the strength of the tooth and very much interested in the retention of the root in the socket. After the removal of the pulp the attentions of the bridge worker should be directed towards the construction of a bridge which will in no way interfere with the retention of the root in the socket. Too often do we find too many teeth on a bridge, the result being that the first dummy is crowded right up against the abutment tooth leaving no cleansing space between the abutment and the first dummy. Aside from the removal of the pulp and the fitting of a cap or band to the root there is probably no one thing in bridge work of so great importance as the construction of a bridge which has a good cleansing space between the abutments and first dummies. If the profession will forget about the strength of the teeth and practice all the prophylactic measures possible with their ingenuity to retain the roots used as abutments, bridge work will have taken a step forward.

I was glad to hear the essayist bring to your attention the necessity for taking more time in the preparation of the roots. It takes very much more time than most operators are putting upon it. This part of the work is like all the rest of bridge work, it takes time to study the case as well as time to construct it. The essayist speaks about the paralleling of roots and the necessity for having the work done by himself on the patient at the chair instead of sending it to the laboratory where the work must be done on models. If the best results are to be obtained the case must be studied from the time the roots are being ground until the case is completed. I would disagree a little with the essayist on the merits of the partial plate over some removable bridges. There are a few of these cases, I believe, that are far superior to a majority of the partial plates. In this connection I want to say that I believe that a majority of the men practicing bridge work overlook the fact that the larger ones, if properly constructed, are more successful than the smaller ones from the patient's standpoint, because the strain which is likely to be put upon one or two abutments of a short bridge will be distributed over a greater number of teeth. In these larger cases a great many practitioners are putting a partial plate while many of them are ideal cases for a large fixed bridge. I was extremely glad to have the essayist place the emphasis he did upon the use of the cast filling for bridge work. If there is any one thing that is going to do injury to bridge work it is the use of the present cast gold inlay. It is an artistic thing and a grand help in many cases but to think of the majority of the profession who have never learned or practiced what is now regarded as proper cavity preparation using the cast inlay as an abutment is ridiculous. We have some of the boys from Chicago here today who are undoubtedly booming the cast gold inlay for bridge work and it is probably very successful in their hands. I fear, however, that they are forgetting to say what should be said to a majority of your results. I do not want to be understood, however, as saying a word against the cast gold inlay, but I do want to go on record again very emphatically against the use of the cast gold inlay as abutments for bridges except in the most carefully selected cases.

Dr. W. V. B. Ames: Being a member of the society and being ambitious to be mixed up with such a good thing as this paper, I am anxious to get into this discussion. Dr. Grieves' paper is not only up to the times, but ahead of the times. I wish to talk a bit about extension saddles, and I want to ask Dr. Grieves whether he referred only to saddles between the abutment, or whether he had in mind also extension saddles?

Dr. Grieves: Only between abutments.

Dr. Ames: I want to go further. A salutary condition can be established beneath an extension saddle also. These extension saddles are particularly valuable upon the lower maxilla with the cross connecting bar now so successfully used. In constructing an extension saddle backward from a lower cuspid or bicuspid, there is an advantage in carrying the saddle as far as the surface of the maxilla will admit, because the further you carry it the greater will be the support against leverage, and the greater will be the resistance to force applied. Even with occluding teeth in the opposite jaw no further posteriorly than the first molar, there is an advantage in carrying the extension saddle to the region originally occupied by the second or third lower molar.

In the adaptation of such a saddle, success as I have found it, depends on swaging the thin metal to the tissues direct, after an approximate form has been gotten upon model or dies. An abutment and extension saddle after being connected by solder in the best relation possible from working upon models may have the adaptation to the maxilla improved by being transferred to the mouth, and adapted more accurately to the tissues by what I will call a thumb and finger swage. By taking an impression of the appliance in situ, and making a model from this, you will have the opportunity to mount dummies upon a saddle which probably has the proper adaptation to the tissues. In constructing a saddle between abutments this thumb and finger adaptation to the tissues will be accomplished with one end of the saddle not yet soldered. After adapting the saddle to the tissues in the region of that abutment there should be an impression and investment of the appliance for the soldering at this end, after which the opposite end which had been previously soldered should be melted apart and returned to the mouth for the more accurate adaptation in this region, and then resoldered to its abutment in its improved adaptation. This seems like a complicated method, and yet if the saddles are to be made they should be thus accurately adapted, as success or failure of such an appliance depends upon the accuracy of the adaptation.

Another matter which especially interested me was the reference to the use of other metals than gold and platinum in the construction of these saddles. Dr. Grieves and I compared notes some years since upon the action between oral tissues and pure silver. It is well known that a pure silver drainage tube will be bright and perfectly clean to the extent that it is in contact with the tissues, while that part extending beyond the tissues may be very black. The tissues in contact with the silver can be expected to be in fine condition. I have made saddles in which the metal in contact with tissues was pure silver with very satisfactory results. On removal the silver is absolutely clean and the tissues more nearly normal than is usual with either gold or silver. If silver will do this as a saddle and as a drainage tube it is a good thing of which to make bands to go beneath the soft tissues for any purpose.

I want to comment on what Dr. Ward said about the 14-tooth bridge being more successful than smaller bridges. The lower bridge gives immobility of all teeth embraced, whereas in the treatment of the same condition by three bridges there is mobility of the three parts with the probability of each bridge failing in a comparatively short time.

A paper has been published quite recently arguing immobility as a factor in the cure of pyorrhea. I think it is an undisputed fact that the deposits of serumal calculus is encouraged by malocclusion of teeth and wrenching of roots in their sockets, and that once immobility is secured there is no longer a tendency to the deposition of this serumal calculus.

I want to comment a little on the slap at Chicago in regard to the gold inlay. At one point quite removed from Chicago, a demonstrator was showing up the base of a chair, and after he had explained it at length he was asked, "Is that a Taggart Casting Machine?"

Dr. G. E. Bishop: I feel honored in being called upon to speak upon this subject, and I wish to say that Dr. Grieves' paper strikes me very forcibly. Those of you who are members of the Cleveland Dental Society will remember a paper a while ago in which I spoke of the necessity in the construction of bridge work of protecting the gum tissues, particularly the gingiva. In the elaboration of such work I have sought to get away as far as possible from all material or substance that presses against the gingival margins. I have been using the bar plate, which Dr. Goslee originated, for the lower restoration, and a saddle for the upper, a narrow, flat piece of cast gold running across the slope of the palate.

One point to which I wish to call your attention particularly is to keep away from the necks of the tooth and protect all the gingival margins. Protect them by keeping away from them, and by giving them freedom in the circulation.

Dr. C. G. Myers: I think this one of the most progressive papers to which it has ever been my pleasure to listen.

There are two points only that I wish to mention, one is that in almost my exclusive practice in crown and bridgework I have never placed a crown on a tooth with a live pulp, or have never bridged to a tooth having a live pulp, and I have never had cause to regret the practice.

Another point I wish to emphasize is that in constructing crowns and bridges, forget that you have articulation. Do every bit of it in the mouth.

Dr. Capon: There is one part in regard to cleanliness under the bridge. It is pretty difficult to get a bridge of that type (indicating) or any other type which would be hygienic. I had a case come in from a town; I found a very serious looking gum, and I thought that the dentist that put in the bridge had gotten a little too far and did not allow for the sagging of the tissues. I looked under the bridge, and it was a very nicely kept mouth. I took a small tape and I scoured under the bridge the best I could, and I said she should come back in a few days. She did not come back for about ten days and the surrounding tissue was perfectly healthy again. It is that nicety of adjustment under the saddle that is going to work for success.

Dr. Grieves (closing): I want to say a word in regard to the pulp question and the cleaning up of teeth. It is not a question of whether you are going to devitalize or not; it is a question of whether the tooth is ground—with all the technique that our friend Dr. Weaver has—correctly. You have taken off all the enamel and some of the dentine, and you have exposed the tubuli to mouth infection, and the chances are that after a little while a section of that pulp will show little fatty spots through it and a little later that pulp will die. I very much appreciate what Dr. Weaver said of the other than the normal root openings. If the crown is deflected or twisted in development the roots which are added afterward are deflected with more than one nutrient vessel. I would rather take a chance on doing clean root work than letting nature do it the best she can.

I want to thank Dr. Ward for what he said. And in regard to Dr. Ames, I would not want to start a talk on the question of silver in the mouth; it would take too long; because I think later you will hear great things of silver—a leading gynecologist after large lapartomies uses no other dressing but silver foil, which is applied right next to the tissues. We know what silver will do near the mouth tissues, and I have great faith in the care that the tissue will take of any metal that will be put near it.

The one other point was that of the saddle and Dr. Capon did not hear the points that we made. It was that after the bridge was made and taking care of the gingivae and ground and adjusted and occasionally set with gutta percha for several days and allowed to settle until finally cemented in. I said that these saddle bridges were most dangerous unless they were allowed to settle and be worn for some time before attaching, and am on record as absolutely opposed to extension saddles broad for support in fixed bridges. I thank you, gentlemen.

REPORT OF COMMITTEE ON PYORRHEA ALVEOLARIS*

By E. M. Ramelli, D. D. S., Chairman Com., New Orleans, La.

(*Continued from page 809 September Summary.*)

QUESTION FOURTEEN AND ANSWERS

No. 14—Does the disease attack all teeth alike?

Answers: No. 1—Says: If anything, the cuspids are rather more exempt than the other teeth.

No. 2—Says: One tooth is as susceptible as another when environment is favorable.

No. 3—Says: No.

No. 4—No answer.

No. 5—Says: Yes.

No. 6—Says: Yes.

No. 7—Says: It may.

No. 8—Says: I have not made sufficient statistics to find out if it attacks all teeth alike or not.

No. 9—Says: No. When the molars are involved I find that the process spreads more rapidly than in single-rooted teeth.

No. 10—Says: No; bicuspids and molars usually.

No. 11—Says: No.

No. 12—Says: The question is somewhat ambiguous. Personally, I believe that it is the better-formed teeth with a thick covering of healthy enamel which are affected, as the amount of epithelial debris in the periodontium is increased, which is the probable pabulum of the specific bacillus. I have not seen a case of Pyorrhea Alveolaris in the mouth where stomatitic teeth were present.

No. 14—Says: Yes.

QUESTION FIFTEEN AND ANSWERS

No. 15—Were patients ever afflicted with syphilis, tuberculosis, uricaemia, chronic indigestion or chronic constipation?

Answers: No. 1—Says: Almost always some disturbance of the general system.

No. 2—Says: The diseases here mentioned, like any other disease or cause which lowers vitality, may reduce resisting power to the onset, progress and ravages of any disease, especially to zymotic or infectious diseases; but it hardly seems that other diseases can be the cause of this disease any more than that they can be the cause of others. In its advanced stages Alveolitis seems in many cases to be an infectious disease, but not due to any specific germ (possibly pus tubercular infection more than other, but not necessarily associated with pulmonary tuberculosis). It yields to proper treatment as readily or more readily than many other local diseases either of flesh or bone.

Autointoxication or lack of resisting power, however caused, makes one more susceptible to other diseases as well as to this; but a low state of health could be the sole cause of an infectious disease. The microbes of infection are ever present in great abundance, Miller having isolated more than one hundred different kinds of bacteria from the juices and the deposits in the mouth. So, when the gums and periosteal membrane are sore and bleeding from impingement of tartar bands, the wedging of food or any other irritant, infection may readily start and the disease follow. Lesions of the gums about the teeth are so universal that the wonder is, not that there are so many diseased mouths, but that there are not more.

Low resisting power, then, not only makes one more susceptible to disease, but fosters it and permits its ravages to be more extended. The infections to be considered in Alveolitis are those that produce osteomyelitis, caries or tuberculosis of bone, gummata or syphilitic lesions and actinomycosis. The ultimate result in each one of these infections is dead bone.

Necrosis from lead, mercury, phosphorous and all other chemical causes are not to be considered here, since their etiology is apparent.

If systemic treatment is demanded, it should be directed toward the restoration of normal health by such means as the elimination from the diet of foods which do not become wholly digested and assimilated, and the copious drinking of pure water. If the local trouble is complicated with other diseases of moment, the general practitioner or specialist should take charge of those.

No. 3—Says: Majority of cases associated with uricæmia.

No. 4—No answer.

No. 5—Says: Have seen cases of Pyorrhea associated with each.

No. 6—Says: I doubt whether the enumerated expressions have any consideration in Pyorrhea Alveolaris. I should say that fatty and renal degeneration, gynecological disorders and loss of vitality of generative organs are the only indications to my mind.

No. 7—Says: The above conditions hasten the disease.

No. 8—Says: I do believe that the lowering of the system by syphilis, tuberculosis, uricæmia, chronic indigestion or chronic constipation or any other depressing or wasting disease, may be one of the causes of Pyorrhea, inasmuch as it lowers the resisting power of the gum to any infection that may occur in the mouth.

No. 9—Says: None or anyone of these diseases mentioned were present, and might be attributed as either a direct or indirect cause of Pyorrhea.

No. 10—Says: Mostly uricæmia.

No. 11—Says: Yes.

No. 12—Says: Syphilis, tuberculosis, uricæmia, not to my knowledge; chronic indigestion and chronic constipation, yes.

No. 14—Says: Yes. Many cases of indigestion and other systemic disorders are the result of Pyorrhea.

QUESTION SIXTEEN AND ANSWERS

No. 16—Have you ever seen cases where malocclusion was a cause?

Answers: No. 1—Says: As an exclusive cause, think not; but at times, contributory.

No. 2—Says: No.

No. 3—Says: Yes.

No. 4—No answer.

No. 5—Says: Yes.

No. 6—Says: No.

No. 7—Says: Yes.

No. 8—Says: I do believe that malocclusion is one of the prime exciting causes of pyorrhea.

No. 9—Says: Don't remember.

No. 10—Says: Not the only cause.

No. 11—Says: Yes.

No. 12—Says: No; not as an exciting cause, but malocclusion has resulted in the chronic form of the disease, due to "tilting" of teeth through loss of alveolus, etc.

No. 14—Says: Yes.

QUESTION SEVENTEEN AND ANSWERS

No. 17—Do you think autointoxication a cause?

Answers: No. 1—Says: In the broadest application, yes.

No. 2—Says: No; but it may be a factor. (See Answer 15.)

No. 3—Says: Yes; it influences

No. 4—No answer.

No. 5—Says: Yes.

No. 6—Says: No.

No. 7—Says: No.

No. 8—Says: I do think that autointoxication may be a cause.

No. 9—Says: Is a predisposing cause.

No. 10—Says: Yes.

No. 11—Says: Yes.

No. 12—Says: No: certainly not; otherwise, it would not be infective, which it certainly is.

No. 14—Says: Local, yes; not otherwise.

QUESTION EIGHTEEN AND ANSWERS

No. 18—Do you think uricaemia a cause?

Answers: No. 1—Says: Think it possible.

No. 2—Says: No; but it may be a factor. (See answer 15.)

No. 3—Says: Yes.

No. 4—No answer.

No. 5—Says: Yes.

No. 6—Says: No.

No. 7—Says: No.

No. 8—Says: I think uricaemia may be a cause.

No. 9—(Answers Nos. 19, 20 and 21 with this one) saying: More than likely, and am of the opinion that it affects the gums and alveolar process, but principally the peridental membrane. Partial elimination of toxines, etc., takes place around the necks of the teeth. In view of the fact that the membrane in this region is of low vitality and becomes easily affected. Degeneration, followed by suppuration, is the result.

A striking example of gingival affection, due to metal poisoning, is in excessive doses of Bismuth Paste injected into remote parts of the body, causing temporary discoloration of the teeth and sloughing of the gingival tissues.

No. 10—Says: Yes; a predisposing cause.

No. 11—Says: Yes.

No. 12—Says: No.

No. 14—Says: No.

QUESTION NINETEEN AND ANSWERS

No. 19—Is it a disease of the gum?

Answers: No. 1—Says: Secondarily.

No. 2—Says: In its incipient stages it is. (See answer 6.)

No. 3—Says: No.

No. 4—No answer.

No. 5—Says: Suffers from the effects of the disease.

No. 6—No answer.

No. 7—Says: Originally due to anything that will excite inflammation in the gum.

No. 8—Says: I think it is a disease of the gum and a disease of the alveolar process and of the peridental membrane, all of which join in undergoing infectious degeneration.

No. 9—Answered under No. 18.

No. 10—Says: No.

No. 11—Says: No.

No. 12—Says: At first it certainly is, and, later on, the mucoperiosteum becomes more and more involved, causing them to become tumid, purple blue in color coriaceous and slightly glazed through stretching of the epithelium.

No. 14—Says: Yes.

QUESTION TWENTY AND ANSWERS

No. 20—Is it a disease of the Alveolar process?

Answers: No. 1—Says: Yes.

No. 2—Says: In its chronic, suppurative or pyorrheal and necrotic stages, yes. (See answer 6.)

No. 3—Says: Not directly.

No. 4—No answer.

No. 5—Says: Suffers from the effects of the disease.

No. 6—No answer.

No. 7—Says: Yes; but secondary to the gum inflammation.

No. 8—Answered under No. 19.

No. 9—Answered under No. 18.

No. 10 Says: Yes; by continuity of tissue, but not essentially.

No. 11—Says: Yes.

No. 12—Says: Not a separate disease, but necessarily the alveolus becomes involved, leading to absorption produced by inflammation occasioned by toxines and other products due to the infective progressive inflammation of the periodontum.

No. 14—Says: Yes.

QUESTION TWENTY-ONE AND ANSWERS

No. 21—Is it a disease of the peridental membrane?

Answers: No. 1—Says: Secondarily.

No. 2—Says: The peridental membrane and periosteum are always involved as is the gum and bone, excepting in the initial lesion, where the gum is first irritated. (See Answer 6.)

No. 3—Says: Opinions differ.

No. 4—No answer.

No. 5—Says: Suffers from the effects of the disease.
No. 6—Says: Peridental membrane.
No. 7—Says: All of the above tissues suffice.
No. 8—Answered under No. 19.
No. 9—Answered under No. 18.
No. 10—Says: Yes; essentially.
No. 11—Says: No.
No. 12—Says: Most certainly it is the principal tissue affected after the initial lesion of the gingival margins.
No. 14—Says: Yes.

Excerpts From Some of the Letters Received by the Committee.

The Kentucky State Association says:

"DEAR DOCTOR:—I have filed your correspondence as received. We would be glad to take up the matter again this year at our annual meeting. If you desire our society to affiliate further with you in this matter, kindly let me know the details and the method you would suggest.

"Yours fraternally,
(Signed) "W. M. RANDELL, *Secretary.*"

The Mississippi State Association says:

"DEAR DOCTOR:—Will be glad to do what I can for you when I receive questions.
Yours truly,
(Signed) "L. B. PRICE, *Secretary.*"

The Pennsylvania State Society says:

"DEAR DOCTOR:—I presented your original letter with questions to the council, and president of our State Society, and it was labeled. This was done as the greater portion of the time of the council was taken up by the question and method of reorganizing our society. Personally, I regret nothing was done in this matter.
Fraternally yours,
(Signed) "LUTHER M. WEAVER, *Secretary.*"

The South Dakota State Society says:

"DEAR DOCTOR: If you will send me another set of questions I will see to it personally at our next meeting, and try to get a report to you on this very important subject.
Very truly yours,
(Signed) "F. V. BROWN."

Dr. M. H. Fletcher says:

"DEAR DOCTOR:—I am especially glad of the suggestion of your committee that we ask governmental assistance. You will note that I have referred to this in the discussion of my paper. I suggested that it be in connection with the Carnegie Institute, and I sincerely hope some plan will be carried out.
Fraternally yours,
(Signed) "M. H. FLETCHER."

Dr. A. M. Jackson says:

"My Dear Doctor: We wish you great success in this work—for humanity's sake. I see more Pyorrhea now than ever before in my practice of eighteen years, and I am not a specialist in that line, either.

"You are on the right line, I think, and I am hoping for good results.

"Fraternally,

(Signed) "A. M. Jackson."

The Virginia State Association says:

"My Dear Doctor:—It seems to be the unanimous sentiment of our Association, at least of those present at the late meeting, that Pyorrhea Alveolaris is not a disease at all but a symptom; that the real disease is gout, and that it is, therefore, scarcely within our province to answer your categorical questions based upon the assumption that it is of itself a disease. Were it otherwise, and did we agree with you, it seems to this committee that there would be, in our society, such a variance of opinion as to the answers to your questions that we would never be able to frame answers to all of them, or indeed, most of them, on which the members of our society could agree. Very truly yours,

(Signed) "Jos. W. Eggleston, *Chairman Committee.*"

Dr. William Dunn, of Florence, Italy, says:

"Dear Doctor:—The subject is of such vast importance, and the systematic manner you are investigating it in seems to deserve so much encouragement, that I have taken the liberty of having the list of questions typewritten and sending a copy to each of the following leading Italian practitioners. Let me know if I can assist you in any way.

"Sincerely yours,

(Signed) "William Dunn."

Dr. J. Dancer Whittles, of Birmingham, Eng., has sent the committee two pamphlets on Pyorrhea Alveolaris in which he says:

"A cure is possible of this distressing malady which is believed to be an infective ulceration of the periodental membrane leading to necrosis of the cementum and total absorption of the Alveolar processes of the maxilla and mandible, and consequent loss of the teeth. It is, unfortunately, only the better-formed teeth which are affected, hence the loss is more deplorable. During the ulcerative process the cervical lymphatic glands may become enlarged, and painful to such an extent as to suggest tuberculous infection; and, on that score, they have been needlessly removed. I fear that this troublesome disease is too often overlooked by the physician, and it may probably be the cause of many forms of toxæmia.

"Its increasing prevalence is positively alarming, and unless some drastic measures of stamping it out are taken there will be very few gnashings of teeth (natural of course) to be heard."

Dr. Arthur H. Merritt, of New York, says:

"MY DEAR DOCTOR: I beg to say that I heartily indorse the work undertaken by your committee. If my opinion will be of interest to you I shall be glad to give it.

"The opinion which I express has been formed after more than ten years' careful study of Pyorrhea, and clinical experience in its treatment.

"I regard Pyorrhea as a curable disease, in many instances dependent only upon the thorough removal of the deposits and the subsequent maintenance of proper prophylactic measures on the part of the patient. This is the first requisite. I believe the disease a local one and can be cured by local treatment only. In others again an inherited or acquired inability to elaborate the chemical protective substances of the blood render persons subject to the disease. These are cases which give a family history of Pyorrhea, and develop it at a comparatively early age. Such cases can be cured by supplementing the local treatment (which must always be the first consideration), by the use of bacterial vaccines, thereby stimulating the patient's reactive forces against infection. I have cured such cases by this treatment.

"In still other cases this condition (lowered resistance) is only a local one, due to the poor circulation within the alveolar tissue. Here a systematic course of massage should supplement the curetting.

"Most cases, in which the disease has not progressed so far as to leave insufficient support to the tooth can be cured in my opinion.

"I do not believe that the so-called gouty or rheumatic diathesis has anything to do with the causation of the disease. I have never seen it in children or youth. It rarely attacks all teeth alike. Malocclusion may be one of the causes. I believe it to be a disease of the alveolar process and pericemental membrane.

"Wishing you every success in your excellent work, believe me

"Sincerely yours,

(Signed) "ARTHUR H. MERRITT."

California State Dental Association says:

"DEAR DOCTOR:—No action was taken, due to the fact that no one volunteered to answer your questions. Am very sorry we have not been able to help you in your investigations; but, if you still wish me to do so, will bring the questions before the association at the coming meeting.

"Yours very truly,

(Signed) "C. E. POST, *Secretary.*"

Dr. R. C. Hutchinson, Jr., of New York, says:

"MY DEAR DOCTOR:—It gives me great pleasure to comply with your request on this subject, as I am devoting my entire time to the treatment of pyorrhea, and I am, of course, more interested in this subject than any other pertaining to the practice of dentistry.

"Doctor Stockton, chairman of the committee of the New Jersey State Society, has asked me to request you to accept my personal report; also, as that of the committee of the New Jersey State Society, as the society does not meet until July.

"Wishing you a most successful meeting, I am

"Yours very truly,
(Signed) "R. G. HUTCHINSON, JR."

This concludes our report for the past year.

Respectfully submitted,
(Signed)
E. H. RAMELLI, *Chairman.*
JULES J. SARRAZIN,
H. E. BELDEN.

"HOLLOW WIRE"

By Dewey Duane Smith, D. D. S., Sandusky, Ohio

A great many dentists would like to eliminate the inconvenience of the alcohol lamp and would like the convenience of compressed air, but do not want to have large, unsightly gas tubing nor leaky rubber tubing.

The desired effect can be obtained by making use of a small hollow wire (such as is used in gasoline lighting systems) about the size of temporary stopping.

The wire is easily bent to meet any requirement and is very cheap (three cents per foot), and will stand a pressure of fifty pounds.

The wire and connections for the same, also air tanks, can be secured from the Superior Manufacturing Co. of Ann Arbor, Mich., who would send a catalog upon request.

Another way I made use of this tubing was to arrange a laboratory light over my bench. From the line of gas cocks at the back of my work bench I extended some hollow wire up to the attachment for the lamp. The attachment for the lamp is the inverted base of an old Bunsen burner, then making a double goose-neck, first one curving down, next one up, with a ground joint between the two (thus making the lamp so it can be taken off at will, also can be moved over more space). The lamp I used was a Reflex with a by-pass connection so I can turn it on or off as readily as an electric.

I have cut my electric bills in half and changed from a sixteen candlepower electric to a one-hundred candlepower gas.

The wire will stand a German silver or gold solder.

Many other ways of using "Hollow Wire" will present themselves.

MISCELLANY

DENTISTRY AND NEEDS OF THE DENTIST

By Alfred Owre, B. A., M. D., C. M., D. M. D., Minneapolis Minn.

(Continued from page 837, September Summary.)

Another field of usefulness is the study of man's soul, the characteristics of his mental and moral activity: great progress has lately been made in this work. They study all the manifestations of intellectual and spiritual life, and they enquire into the physical conditions under which the mind works; they watch the spontaneous and unconventional actions of children; they investigate the laws of heredity; they examine the eccentricities of genius and the alienation of human powers. Thus the conduct of the human understanding and the laws of progressive morality will be better understood, so that more wholesome methods of education will be employed in our schools.

The study of society is another important branch which engages our attention by delving into the archaeological and historical memorials of the race. The discovery of primeval monuments and the interpretation of long hidden inscriptions, the publication of ancient documents hidden in various archives, the inquiry into primitive forms of social organization; the aim of these inquiries is to help on the progress of modern society by showing how the fetters which now bind us were formed, by what patient filing they must be severed, and at the same time to work out the ideal of a society in which liberty is everywhere, but *liberty sustained by law.* Languages and literature should receive due attention. We study languages that we may know the men of other climes and other days, and we study literature to enjoy it. As an aid to intercourse with people of other nations, and for the purpose of keeping up with the record of modern science, nobody doubts that the study of modern languages is to be encouraged, and if we want to put ourselves in real sympathy with the ancient world we must not be restricted to the writings of today nor the modern languages only. Indeed, it is to Greece we owe the love of science, the love of art, the love of freedom; these three vitally correlated with one another and brought into organic union. The Greek genius is the European genius in its first and brightest bloom. Its germs are manifested in all progress.

We now come to a branch of knowledge which is somewhat depreciated

---

Note—On page 831, September number, fourth line, sixth word should read "course" instead of "source."—Ed.

by the average man: mathematics, and yet it lies at the very basis of all our knowledge of this world. To count, to measure, and to weigh, are steps in civilization, and as we extend our powers in these directions we find that even the distances and mass of the planets, the form of the earth, the velocity of light, the mechanical equivalent of heat, and the unit of electrical resistance may be accurately ascertained and the results may become a part of the intellectual possessions of every educated person. Still the *exact* science and its influence upon civilization is not sufficiently considered. However, suffice it to say that the progress of mathematics underlies and sustains all progress in exact knowledge; for instance, the results in steam locomotion, telegraphy, telephony, photography and electric lighting and the endless chain of benefits to mankind therefrom, all largely due to the university laboratory and guidance. And these things are still in their infancy; as the region of the unknown is infinitely greater than the known, there is no fear of there not being work for the whole world for centuries to come. Perhaps the most forcible illustration we can have of the value and benefit of university work to man is the influence of chemical research. Chemistry, we might say, is the child of the nineteenth century; the atomic theory, which lies at the foundation of all modern investigations, was announced by Dalton between 1804 and 1808. Alchemy, the search for gold and for the philosopher's stone, never became science and contributed very little to the good of man; but when the universities, with their trained observers, their methods of accurate work and co-operation, directed their attention to the fundamental laws of atomic combination, the science of chemistry grew with rapidity and with benefits to mankind which can never be enumerated. It must be reiterated that the universities established the laboratories and that the motives which inspired their founders and directors was not the acquisition of wealth, but the ascertainment of fundamental law. It was chemistry which made modern anesthesia possible. It was chemistry which made bacteriological discoveries possible. But why should we go on enumerating the vast modern benefits with which we are all familiar and with which we shall deal so much more fully very soon. Let me rather for a few moments mention a few of the benefits to humanity from the university professional schools, choosing the medical department as the most typical illustration. As already stated, the university idea practically originated with the medical profession in Italy about 700 years ago. They saw the necessity for more organized methods of instruction and co-operation in their work in general. And it has been the general aim of medical brethren to give out its experience and to keep no secrets, wherever the latter reigns carelessness and ignorance delight to hide; *skill loves the light*. It is the essence of quackery to deal in *mysteries* and *nostrums*. Thus we have a very high ideal on one side, and the lowest on the other, sometimes descending even to crime. The ethical medical practitioners soon found out that they were unable to provide funds as well as time for such stupendous hospitals and laboratories in connection therewith. And the state also sees that any work which is of so wide-reaching benefit as medicine is in all its branches cannot progress without endowment of some kind. That they should be connected with universities is so logical that we need not discuss it any further, merely stating that the laboratories in the universities are for the use of the advancement of medicine, and all the fundamental sciences are made use of in all medical research. The hospital is merely a laboratory extension in a certain sense. When medical education is thus established it progresses truly, as illustrated by the wonderful advances made at Johns Hopkins university. This must and should be so because if truth and culture are the aims of university faculties, truth and culture will flourish in these colleges. If *sordid motives or jealousies* spring up among their members, the trust they bear will be in peril. It is the spirit of the university which is a great aid to the establishment of the high *unselfish ideal.* We must also not forget that professional work generally implies voluntary, self-impelled *enthusiasm* in the acquisition and distribution of knowledge, and any one incapable of such adjustment had better not be in a university in *any capacity*, student, instructor, professor. Let me repeat here that the university is to fit men for *high* and *noble* purposes, satisfactory to themselves and *useful to mankind!* Traditionally then we see that the medical men (we are included) are especially fitted for university association. It is with the doctors of olden time that we associate the very idea of unselfishness: their lives were governed by a spirit of humanity; they devoted everything they had to suffering men and women, and their steady aim at this time is to prevent the very disorders which it is their business to cure. Dr. Gilman, President of Johns Hopkins, says he does not know of any other workmen who make it their first duty to stop the sources of supply from which they derive their income. This historical interruption is of value to us, because it should be our object to live up to these ideals so that every community will have its Dr. Weelum Maclure of Drumtochty, or Balsac's country doctor in the future as well as in the past. Now that we are aided to some extent by university control and state endowment, our hopes are still brighter.

If we were to mention all the progressive steps made in medicine due to university environment the hour would be altogether too short; but partial allusion has been made to many of them already. Perhaps it will be more interesting to note that the greatest progress in dentistry has been made since the university influence was first felt (Harvard, 1867) and many of them made in university laboratories: Dr. Miller made all of his discoveries while connected with the University of Berlin; Dr. Kirk in the University of Pennsylvania; Dr. Cook in the University of Chicago; Dr. Black's work, so individual at first, found its final culmination in a university. But it has only started, we have not even got the alphabet in shape. The research work in dentistry is comparatively a new field. We have the laboratories, we must get the community interested in the prevention of diseases. The latter is the ideal treatment, and the Utopia for which we set sail.

It behooves us then to recognize quite early that no great advance can be made without preparation of a high order as a preliminary equipment. Next, we must recognize that every item of the curriculum is essential in the general ascent towards the goal. In other words, we cannot succeed without all the links in the chain. Third, we must get rid of the all-pervading *money-getting* idea. It handicaps our efforts towards perfection if allowed to exist as an aim. If the aim is a financial one, go into business at once. Fourth, as workers upon human tissue we have a great responsibility before us, and obligations of a high order to meet. This is so wide in application that it needs a little deep thinking. It means that we must *not only* be thoroughly equipped in our science and *technique*, but also that we must live our lives *mentally, morally* and *physically* in such a way as to benefit our patients in the highest sense of the word. It means that we must be in perfect condition when rendering service from day to day so that we do not subject them to unnecessary pain, annoyance, or deadly infection. A man who uses up his energy in *riotous living* or the *baser pleasures* has *no* business to practice any part of the healing art.

Furthermore, we must recognize our various stations in the institution and show the proper respect to those above us, and also let the general watchword be: "to do unto others as you would have others do unto you." If we apply this greatest of Christ's teaching it would seem as if we could *do no wrong. It can be* applied to all our daily actions; we can ask ourselves whether this is right or wrong, and if unable to decide, wise counsel can be had. It will often require a great deal of will power to do what is right, in fact it is always a battle with the *demon* of least resistance until a partial habit to do the right is established. This should be accomplished in youth while we have the physical power to back up mental conclusions. No true spiritual or physical development takes place without this reasonable examination of our actions. In a calling where conscience is often the only judge and censor, we can easily see that it takes a high order of mental stamina and moral fibre to give to humanity what it has a right to expect. The man who gives evidence of the absence of such ethical germ or training should not be allowed to enter the ranks of this profession, and it becomes the duty of the university to remove him whenever this is made clear, even if it occurs late in his university life. *The university must not be stained by anybody.* This is the broad teaching of the doctrine "love your neighbor as yourself:" *Regard his feelings!!!*

To reiterate, then, this self-examination before acting means deep thinking and reasoning because our actions may influence the many. In a social organization the individual cannot exist for himself or act to suit his own pleasure, or selfish standard, if such it be. The central idea of the university is that it should exist for good, and this must be recognized by the individual student or a body of students. In this connection the individual is sometimes sacrificed, but the individual often forgets the greater cause and starts out to assert himself, using any and all kinds of questionable means to gain his end; hence this timely warning against the selfish, or as is often the case, the false leader or leaders in *local* actions. To bring the question nearer home; whenever you are called upon to sign a petition or agreement gotten up by a few, just exercise your own judgment in the matter, and if unable to decide, postpone your action in spite of all the opposition which may appear victorious owing to hasty and indeliberate action. The university stands for good and authority,—the individual and the few often for selfish ends. We can logically and morally stand by and belong to the university or an organization which unquestionably stands for what is good and demonstrates that this is actually so by its work and influence, but we cannot afford to waste time and energy in any organization which has only partially demonstrated its value. Let me be a little more explicit: When the universities of Europe, and especially of England, were first organized the dormitory or residence for students was a part thereof. It was here that students came into contact with tutors whose spiritual development made them fit for guiding and shaping the character of these young men. They sat at the table together and all conversation was kept within due bounds and restraint. It was the proper uplifting of the mind and spiritual leadership which was manifest; hence the great names from these institutions. Owing to peculiar economic and pioneer conditions the American university originated and developed without the dormitory system, and consequently something else took the place of it; boarding houses, clubs and fraternities, nearly all of them without proper leadership and less spiritual association and development. The aim of the fraternity is, of course, for good, but many of them have not been prolific in such demonstration. The democratic element has also objected to a certain limited social aspect of them, as well as interfering with the main object of university activity. A state institution exists for the entire citizenship and for the greater benefit of all, and as the expense is largely borne by the state it has seen fit in many cases to abolish the fraternity entirely. In our greatest universities fraternities are not allowed, but *scholarship* association is. *Some* of you will be asked to join fraternities and you will be told of all the splendid advantages accruing therefrom. The Constitution of the United States says that we are born free and equal, and we are trying to live up to the principles of a democracy, or as nearly as possible to equalize the happiness of the people. This reflection may cause a little disturbance in the minds of those who are not asked to join and who may be equally well equipped in social status, scholarship and spiritual development. I have no advice to give you as to what to do, but if you want to find out more about fraternities, go to the greatest authority on the Campus: President Cyrus Northrup; I know of no man better equipped to give advice on any subject than he is.

I hope I have now made clear to you that unselfishness and consideration for the feelings of your fellowmen is to be cultivated so that you will live in that attitude unconsciously when you finally leave this university. I hope you see that you must conserve and concentrate your energy upon your work, and that regularity of study and living is of the greatest moment if you are to achieve the end. We are here to do our duty, one and all of us, pleasant or unpleasant, as the case may be. My hope is that your work will be largely pleasant and that all the unpleasant things will come my way; I have had special training for such an office. Whatever arises, however, there must be no shrinking of responsibility anywhere, no laxity of morals or discipline, or compromise with the obtainable ideal. We must bear in mind the greater cause, and work in unity towards that end. Each little action has a bearing on the sum total; a clean man will show clean instruments and a clean bench, as well as clean and honest intention and execution in his work.

With this brief introduction, then, I commend the members of this institution to a future of great possibilities, and let us not be discouraged if the ideal seems distant at times, because after all is said, the greatest virtue lies in the struggle.

Ohio State Dental Society

The Forty-fifth annual meeting of the Ohio State Dental Society will be held in Columbus on December 6, 7 and 8, 1910.

The Society will meet in new and much more commodious quarters, giving ample room for the meetings and for the large number of clinics heretofore so much overcrowded.

The program, both of papers and clinics, will be exceptionally strong. A more complete announcement will appear in the November number of the Summary.

Mark off the dates in your appointment book and begin now to arrange to be present.

EDITORIAL

SYPHILIS

WE MAKE no apology for devoting a greater portion of this number to the subject of Syphilis, for we feel that it is a disease that dentists in general should better understand. When we stop to consider that a large per cent. of the people, particularly males, are in some way afflicted with the disease and that it is so infectious and the results of the disease are so terrible, one cannot fail to see the advantage of dentists being able to recognize cases when they present in their offices, not only for their own safety but the safety of other patients.

Many cases are reported of extra-genital infection and the dentist who cannot recognize the disease in patients is running a great risk.

We often hear dentists remark that in their practice they have never seen a case of syphilis. Perhaps if the truth were known, these dentists were not on the lookout for cases of the disease and failed to recognize them when they did appear. There are probably few dentists who do not at least occasionally encounter a syphilitic patient, in their practice—and when they do, they should be able to recognize the disease and be ready to handle it in such a way as to avoid infecting themselves or any other patient.

One is never sure that he is not carrying some sort of infection to patients unless he religiously sterilizes his instruments after using in the mouth of any person, and is particular about the cleansing of his hands. While the specific germ of syphilis cannot live but a few hours out of the body, at the ordinary temperature, this should be no excuse for not thoroughly sterilizing instruments, and a dentist who neglects to do this should be classed with the criminal.

Many physicians send syphilitic patients to dentists for treatment of the teeth and gums before putting these patients on specific treatment. When this is done the physician should always inform the dentist of the condition of the patient that he may take due precautions—and dentists should see that such an understanding exists between them and their medical friends.

One cannot be too careful in handling cases of this sort.

We hope that every reader will peruse the articles, treating this specific disease, that are presented in this issue for we feel that some good must be obtained by all who read them.

On account of this symposium, a large number of excellent and instructive practical articles have had to be laid over to another number but will soon be given to our readers.

SOCIETY·ANNOUNCEMENTS

STATE BOARD OF REGISTRATION AND EXAMINATION IN DENTISTRY

The New Jersey State Board of Registration and Examination in Dentistry will hold their regular annual meeting in the Assembly Chamber of the State House, Trenton, N. J., December 5th, 6th, 7th, 1910.

All applications must be in the hands of the secretary 10 days prior to the meeting.

For further information apply to the secretary Charles A. Meeker, D. D. S., 29 Fulton St., Newark, N. J.

NORTHERN ILLINOIS DENTAL SOCIETY

The twenty-third annual meeting of the N. I. D. S. will be held the third Wednesday and Thursday (19 20) of October in Aurora. The chairman of the program committee has assured me that he has prepared a "cracken good" program. Come prepared to assimilate it. Frederic H. Bowers, Secretary.

NORTHERN INDIANA DENTAL SOCIETY

The Twenty-second Annual Meeting of the Northern Indiana Dental Society will be held at South Bend, Monday and Tuesday, October 17th and 18th, 1910. Clem Shidler, Secretary, South Bend, Ind.

OHIO STATE DENTAL BOARD

The Fall examination of the Ohio State Dental Board, will commence 9:00 A. M. at Hotel Hartman, Columbus, O., Tuesday, October 18th, 1910. Application blanks can be secured by writing the secretary L. L. Yonker, Bowling Green, O.

FOURTH AND FIFTH MICHIGAN DISTRICTS SOCIETY MEETING

A joint meeting of the fourth and fifth districts of the Michigan State Dental Association, will be held at Kalamazoo, Mich., Tuesday and Wednesday, October 25-26th. A very interesting program will be offered and all ethical practitioners are invited. Sam'l J. Lewis, Secretary 4th, S. W. Money, Secretary 5th.

NEWS and OPINIONS

THE DENTAL SUMMARY

Thirty-First Year.

It is seldom that we occupy space in these pages to talk about our own magazine; therefore, it is hoped that readers will take kindly, and in the spirit intended, all that follows.

Knowing the motives that animate both editors and publishers, knowing that the sole aim is to make The Dental Summary increasingly helpful to the dental profession, we feel it to be a duty to lay before its readers a brief resume of our plans, and to ask their co-operation in extending the usefulness and scope of the magazine.

We ask every subscriber to read carefully all that follows; and then give the magazine, his magazine, a few moments of his time—enough to call the attention of other dentists in his town to the facts herein set forth, and suggest the idea of becoming subscribers.

Tell them to send for sample copies, which are supplied free on request; call their attention to the special offers that are being made; and use your influence in every legitimate way to increase our list of subscribers in your town. If you will do this you will not only confer a favor upon us, but will enable us to make The Summary still more worthy of the confidence and support of every man within the ranks of the profession.

Progressive dentists who have watched the course of The Dental Summary need not be told that it is a magazine of high ideals with abundant resources to make those ideals actualities.

This has been demonstrated, particularly during the past two years, during which time its progress has been both broad and rapid, until today it stands in the minds of thousands as *"The One Magazine that No Dentist Can Afford to Be Without."*

The Dental Summary stands for the Professional side of Dentistry. While by no means ignoring the "business" side of the profession, it holds that the best way, and the only ethical and permanent way in which the income of the dentist can be increased satisfactorily, and in keeping with the high ideals that ought to animate every dentist, is to *Make Every Dentist a Better Dentist*; a better, more earnest, more faithful servant of the public.

This is the "professional" side of dentistry; the side that may have been too much ignored in the rank and file, bringing upon every dentist the stigma of "business" rather than the honorable badge of the professional man. And this is just the side of dentistry emphasized by The Dental Summary.

SPECIAL NUMBERS.

The Special Casting Number, July, 1909, has been called the "best and most helpful number of any dental publication ever issued."

The Special Oral Hygiene number, June, 1910, devoted to the opening of the great educational campaign, whereby the facts and benefits of dentistry are to be made as well known to the masses as any other branch of the healing art, is another issue that gained for The Summary a most enviable reputation.

This, the October number, is devoted largely to a Symposium on Syphilis and Syphilitic Manifestations in the Mouth.

The importance of the subject is well known, since statistics show that a large per cent. of male adults are in some manner tainted, in most stages infectious. Every dentist should be able to recognize the faintest trace of its presence—for his own protection, and that of his patients. The articles will cover symptomology as well as other phases of the subject.

The November number is planned to cover pretty thoroughly

"The Business Side of Dentistry,"

and will contain, among many others, articles by able men in the profession and out of it on the following timely topics:

How to Make a Dental Practice Pay.
Fees.
Business Phases of Dentistry.
How to Maintain Good Fees.
How to Give Patients a Proper Conception of Dentistry, as a Means to Adequate Fees.
Creating a Demand for High-Class Dentistry.
Collection of Accounts and Other Problems.
Personal Requisites in Practice Building.
Keeping Records and Accounts.
Paying Bills.
Influence, and How to Get it.
The Quality of Services Rendered.
Obstacles of the Country Dentist.
Obstacles of the City Dentist.
Is there an Age Limit for Dentists? If so, Why?
Recreation for the Dentist.
Physical Development for the Dentist.
Keeping a Record of Dental Business.
Points to be Observed in Practice Building.
Diplomacy and the Dentist.
Extending the Field of Dentistry.
Some Suggestions on Buying Supplies.
Set Prices.
How a Dentist Should Invest Money.
Advantages of Fraternalism Among Dentists in a Community.
Etc., Etc., Etc., Etc.

These articles and others will cover the field of Dentistry as an Avocation pretty thoroughly, and there is sure to be much that is helpful in all of them.

THREE SPECIAL OFFERS:

Every number of THE SUMMARY issued during 1910 is worth the price of a full year's subscription. We have on hand a small stock of each number. While this stock lasts we will accept subscriptions covering *Two Full Years*, 1910 and 1911, from new subscribers only, at only $1.50, remittances to accompany orders.

For only $1.25, cash with orders, we will send June to December, 1910, and all of 1911.

For $1.00 we will send October, November and December numbers 1910, and all of 1911.

Subscribers who take advantage of either offer, number one or number two, will receive the June, 1910, number, devoted to Oral and Dental Hygiene. This number should be in the hands of every member of the profession, particularly those who have felt the impetus of the Great Educational Movement and are anxious to get into touch with it. The time is ripe, and far-seeing men know that the future of the profession depends upon the breadth of vision and the firmness of grasp upon the situation exercised by its members now.

Fill out the order printed at the bottom of this page, cut out on dotted line, inclose amount in stamps, check or money order, and mail, or send currency by registered letter. If you prefer to have charged through your dealer write his name and address plainly in space provided for that purpose.

Honoring Dr. J. A. Watling, of Washington, D. C., the dentists of Battle Creek, Mich., gave a banquet at the Post Tavern Sept. 6, covers being laid for twenty. Five out-of-town guests were present from Marshall, and two from Kalamazoo. Dr. Metcalf and Dr. Phillips, of Battle Creek, were also guests of honor. Dr. Watling was until recently professor of operative dentistry at Ann Arbor, where he had held the chair for thirty years, and most of the graduates of the university received instruction under him. He is now retired and makes his home in Washington.

The Ransom & Randolph Co., Publishers,
Toledo, Ohio.

Please enter my subscription to THE DENTAL SUMMARY, beginning with the (January, 1910, two full years for $1.50), (June, 1910, balance of 1910 and all of 1911 for $1.25), (October, 1910, balance of 1910 and all of 1911 for $1.00), for which I inclose remittance. (If preferred will charge to any regular dealer.) (*Erase offers not accepted.*)

Please sign name and give full address very plainly.

Name..

Number............Street or Building..............................

City or Town........................ State..........................

Charge through... Dealer

Address...

THE GREAT EDUCATIONAL MOVEMENT.

During the past month the activity of the approaching fall and winter months has been strongly foreshadowed by the receipt of many letters from dentists practicing in all parts of our great country asking for further information as to how best to inaugurate the work in their different localities.

To all such we have but one reply to make: Command us in any way that may occur to you. We have supplied copies of the lecture referred to in August number to dentists in Ohio, Indiana, Michigan, Ontario, South Carolina, North Carolina, Virginia, Georgia, Louisiana, Kentucky, Washington, Oregon, California, Montana and other states. In one instance we wrote letters and sent literature to every member of a city board of education and a county board of school commissioners with the object of interesting them to the extent of co-operating with a dentist who had fitted himself to begin public work; the result being an entire success. We are ready to do the same for all who wish to adopt that plan. It works.

Demands for Dr. Dowd are increasing. On September 9 he was the guest of the Elgin Dental Society, St. Thomas, Ontario, addressing audiences of several thousand afternoon and evening, the local papers speaking in highest terms of his efforts. Full report, with illustrations, will appear in November number.

On September 20, Dr. Dowd led the discussion following an address of Health Officer Dr. Evans, before the Chicago Odontographic Society; on the 23d he was the guest of the local Society at Jackson, Mich.; is now under engagement to visit Kalamazoo, Toronto, Can., and other important points, and the fall promises to be very active.

Everywhere the interest is growing, and no prophetic gifts are necessary to foresee the immense results for good to public and profession sure to follow our united efforts.

The next regular meeting of the Michigan State Board of Dental Examiners will be held at Ann Arbor, Nov. 16 to 19 inclusive. A. W. Haidle, Sec., Negaunee, Mich.

Carmine Rocca, aged 70, is serving out a sentence which includes a fine of $100 and costs, for practicing dentistry and medicine without license at Bridgeport, Ct.

MARRIAGES.

Mrs. Ripley Weds Dr. Weisse.

Dr. Faneuil Dunkin Weisse, dean of the New York College of Dentistry, and Mrs. Mary Church Ripley, formerly assistant editor of "Old China," were married recently at noon at the home of the bride's daughter, Mrs. Clarence McK. Lewis, No. 122 East 30th street, New York City. The wedding was a quiet one. The ceremony was performed by the Rev. Dr. W. M. Grosvenor.

Mrs. Weisse, who is sixty-one years old, is an authority on porcelain and rugs. Her first husband was George Hurlburt Ripley. She was educated in Montclair and at the Packer Institute, Brooklyn. Later she taught private classes in San Francisco. She came to New York ten years ago, and has had a studio in this city. One of her books is "The Oriental Rug Book."

Dr. Weisse was graduated from the medical department of New York University, and served as professor of surgical pathology in the New York College of Veterinary Surgeons from 1865 to 1875. He occupied various chairs in the medical department of his alma mater from 1865 to 1888, and has been connected with the New York College of Dentistry since 1865. He has been dean since 1897. He is sixty-eight years old. Dr. Weisse is author of several technical works and has had many degrees conferred on him. He has lived at No. 46 West 20th street.

Dr. A. R. Cash, of Kansas City, Kas., and Miss Edna Agnes Farnum, a teacher in the Abbott School in that city, were married August 25. After a wedding trip in the east they will return to Doctor Cash's new home at Tenth street and Sandusky avenue, Kansas City, Kas.

Friends of the contracting parties will be pleased to learn of the marriage, September 14, of Dr. Calvin Law Shafor and Miss Casie A. MacIntyre, of Detroit. After October 1 the happy couple will be at home, 58 Rosedale Court.

CAMPHORZONE AFTER EXTRACTION, ETC.

Dr. G. F. Roundsville, of 2758 W. Van Buren, street, Chicago, has used Camphorzone after cases of extraction, also in pyorrhea, and cleaning the teeth, and the results have been better than he expected and better than any agent used before.

DEATHS.

Dr. Elbert T. Davis, Bridgeton, N. J., aged 54, who had been in ill health for some weeks, was found dead in his bed August 12. He was a graduate of Pennsylvania Dental College, and well known.

Dr. John B. Rich, New York City, aged 99, years ago known as the strongest man in the world, died August 12, after an adventurous career, a brief account of which will appear in November number. He was formerly president of the American Microscopical Society, of the Hundred Years Club, and other organizations. He was an authority on physical culture and other subjects.

Dr. Henry Linstead, Torrington, Ct., aged 30, was killed September 5. He was enjoying a ride in the automobile owned and driven by a friend who lost control on approaching a bridge. The machine, running at a rapid rate, climbed the side structure, overturned, fell upon Dr. Linstead, crushing neck and spine.

Dr. Claude Grenach, Pepperell, Mass., was thrown from an automobile in collision with a telegraph pole, under the wheels of a passing freight train, resulting in instant death, September 2.

Dr. Fred R. Beers, New London, Ct., aged 36, September 4, of heart disease.

Dr. A. A. Sullivan, Oswego, N. Y., August 29, of Bright's disease, aged 57. He was a leading dentist of his district.

Dr. George F. Grant, lecturer, writer, inventor and international authority on mechanical dentistry, died at his summer home at Chester, N. H., August 25, aged 63. He was graduated from Harvard dental school in 1870 with honors. Two years later he was given the chair of professor of mechanical dentistry in recognition of his inventive genius. He was one of the founders of the Harvard Odontological society, of which he was for a time the president.

Will readers of THE SUMMARY kindly report items for this department?

Dentists, like artists, are born, not made. We are pleased to announce the advent of another dentist through the birth of a son to Dr. and Mrs. J. M. Bell, Frankfort, Ohio, September 3. Everybody well and happy.

MISCELLANEOUS.

Prominent Dentists Make Narrow Escape From Death.

Indianapolis, Ind., Sept. 5.—Capt. G. L. Bumbaugh, the aeronaut, accompanied by Dr. L. E. Custer, the well-know dentist of Dayton, Ohio, and Dr. Chas. W. Mills, of Chillicothe, Ohio, made an ascension at dusk on Labor day in the balloon ''Indiana,'' which well-nigh resulted fatally for all of them.

The balloon was sent up from the motor speedway, carrying only eight bags of sand, three of which were lost at the start. When a height of about a thousand feet had been reached the balloon was caught in a terrific storm of wind and rain and tossed about helplessly by conflicting currents, the occupants expecting every moment to be dashed to the ground and killed.

After many minutes of most terrifying experience the anchor caught in a tree top, and the occupants of the basket escaped by climbing down the rope, hand-over-hand.

It is not at all likely that either of the men have any unsatisfied longings in the way of spectacular aeronautics.

In the whole of Australia there are now about 2,200 dentists, over one-half of whom are in New South Wales, Victoria, Queensland, South Australia, Western Australia and Tasmania, following in their respective order. The majority of these dentists were educated in the United States, and there are now being educated here about fifty Australian dentistry students.

About one hundred delegates attended the convention of the Eastern Ontario Society at Ottawa, beginning September 1. Following officers were chosen for the year:

President, R. J. Reade, Toronto.

Vice-President, A. T. Morrow, Maxwell.

Sec'y-Treas, Wm. C. McArtney, Ottawa.

Dr. William J. Younger, a well-known dentist of Paris, for many years prominent in social and club life of San Francisco, was tendered a banquet by a number of dentists of the latter city on Monday night, Aug. 29, at the Bohemian Club. Those present were: William J. Younger, S. E. Knowles, J. D. Hodgen, J. H. Hatch, C. W. Knowles, Thomas Morffew, F. C. Pague, A. H. Wallace, E. A. Younger, J. M. Dunn, A. Warren, L. Teague, Clyde Payne, Dr. Brewster, Justice H. A. Melvin, Russell H. Cool and M. Levkowicz.

ROBBERIES.

New York, Nebraska, Delaware, Kansas and Maine Contribute to Thief's Coffers—Two Burglars Caught and Identified.

An unusual lassitude seems to have held the hands of dental shoplifters during the past few weeks, giving us an unusually small list to report this month. With the cool weather we may expect the usual "fall opening" along this line, to be followed by the regular grist during the winter. "Touch and get away" is the program of the dental thieves, but occasionally one "gets his."

From the Omaha Bee, August 26, we copy the following:

Confessed Thief Is Held—Arthur May, who confessed robbing the Peterson-Caldwell dental office of a quantity of dental gold, was arraigned before Judge Crawford and bound over to the district court for the sum of $250. May went into the office and after stacking up all the tools and things of value about the room preparatory to making his haul, was interrupted by the janitor. He succeeded in passing out, however, by telling the man that he had been drunk and had passed the night there.

From the Portland (Me.) Argus, August 27, comes this:

The police department is fast piling up evidence against the man caught here a few days ago in the act of breaking into the dental office of Dr. Coleman, which connects the chap with similar breaks and substantiates the belief that an organized gang was going about the country plying their game of robbing the offices of dentists.

In nearly every case brought to light since the arrest the trick was turned in practically the same manner and evidently by use of false keys.

It seems that on the Sunday night previous to the capture of the man held at Manchester, four dental offices were entered in Manchester and a considerable quantity of gold was stolen.

A picture of the prisoner was sent out from the local department to the various departments, and among others Manchester was the means of starting a chain of inquiry that results in the evidence that is being collected against him.

The man gives the name of Warner or Warren, and is being held to the Superior Court.

Poughkeepsie, N. Y., Sept. 9.—The offices of Drs. G. A. Northup and B. B. Williamson were entered by means of skeleton keys last night, and gold and money to the amount of about $200 secured. The man, evidently an expert, opened the safes by working the combination, and left behind him no traces of his visit except the open doors. There was not so much as the scratch of a jimmy to be found.

Salina, Kans., Aug. 22.—The offices of Drs. Wade & Henson, and that of Dr. Sharp were entered last night. Gold and money to the amount of about $100 were taken. No clue.

Wilmington, Del., Sept. 1.—Dr. J. H. Hallett was robbed last night of gold amounting to about $75.00. The office was entered by means of skeleton keys. No trace of the burglary was discovered until the gold was missed. Every drawer was in its place, and no damage was done. No clue.

Fairbury, Neb., Aug. 16.—About $15 in gold was taken from the office of Dr. W. B. Smith early this morning, together with a few small articles of jewelry. The police are searching for two suspicious looking characters seen about town for the past day or two.

BANQUET TENDERED DR. L. D. ARCHINARD.

In appreciation of the many years of valuable services to the dental profession, the Odontological Society of New Orleans tendered Dr. L. D. Archinard a surprise banquet at the West End Hotel on August 24th.

Dr. Archinard is ex-president Louisiana State Dental Society, ex-president First and Second Districts Dental Society, founder of the Odontological Society, organizer of and professor of the New Orleans College of Dentistry, Dental Department of Tulane University.

One of the features of the evening, which came as a surprise within a surprise, was the presentation of a handsome solid silver loving cup as a memento of the occasion.

Dr. A. G. Friedrichs acted as toastmaster. The following gentlemen were present:

Drs. L. D. Archinard, A. G. Friedrichs, H. P. Magruder, Paul DeVerges, St. Clair Duke, L. G. Duke, E. B. Ducasse, A. L. Ducasse, E. L. Fortier, Jos. Bauer, C. N. Gibbons, A. A. Leefe, J. E. Burleigh, E. S. Magner, T. J. Wingrave, A. J. Perrault, V. K. Irion, F. H. Field, W. Healey, G. N. Weiss, M. O. Carey and J. J. Cappel, of New Orleans. Drs. S. J. Bourgeois, A. Bernard and H. J. Chauvin, of Morgan City; Dr. J. A. Richard, of Plaquemine; Dr. W. J. Boudreaux, of Patterson; Dr. J. Hall LeBlanc, of Whitecastle.

DENTAL MANUFACTURERS' MEETING, BELLEVUE-STRATFORD HOTEL, PHILADELPHIA, OCT. 25, 26 AND 27.

The Dental Manufacturers, consisting of most of the important manufacturers of dental goods in America, announce an exhibit of their goods in the ball room of the Bellevue-Stratford Hotel, Philadelphia, October 25, 26 and 27.

Invitations have been sent to all the dentists of Pennsylvania, New York, New Jersey, Delaware, Maryland and the District of Columbia, and all dentists, wherever located, are cordially invited to attend the sessions.

Instead of dividing their exhibits and scattering their demonstrators, several years ago the principal manufacturers decided upon the policy of holding an occasional great dental exhibit, at which all are represented, with full lines of goods, and under the oversight of their ablest demonstrators.

In March of the present year an exhibit was held in Boston which was largely attended, previous to which successful exhibits have been made in Cincinnati, New York, Kansas City, Chicago and elsewhere.

The Committee advertises "The greatest dental exhibit ever held anywhere," and from the preparations being made by the Committee, they are not likely to fall very short of their expectations.

Programs and cards of admission will be mailed to all denitsts in the states above named and to all others who signify their intention of attending the exhibit.

Write your dealer.

A TIMELY BOOK ON AN IMPORTANT SUBJECT.

Dr. T. C. Trigger, L. D. S., D. D. S., Licentiate of the Royal College of Dental Surgeons, Canada, and Member of the Dental Department, University of Toronto, has written a book of 111 pages, the title being: "Notes on Methods of Filling Teeth with Gold Inlays," that should be bought, read, studied and digested by every member of the profession. The matter making up the book is the outcome of clinical demonstrations presented before dental societies from the beginning of interest in this method of filling teeth down to the present time.

Following are some of the subject-headings:

Advantages of Gold Inlays.
Direct Method of Forming the Matrix.
Indirect or Impression Method.
Means of Retention.
The Hollow Inlay.
The Shell Inlay.
Inlays of Sponge Gold.
Preparation of Cavities.
Restoration of Abraided Surfaces.
Proximal Cavities.
Proximal-Occlusal Cavities.
Inlays as Bridge Abutments, etc.
Setting and Finishing.
The Casting Process.
Etc., Etc.

Further description, price, etc., will be found in our advertising pages.

TWEEDLEDUM OR TWEEDLEDEE?

Attorney General Brigham, of Indiana, has rendered an opinion concerning requirements to practice dentistry in that state that makes it possible for the State Board of Examiners to protect the public against the operations of incompetent charlatans.

In the opinion, F. R. Henshaw, secretary of the State Dental Association, is told the use of "may" in the statutes is in the permissive and not the mandatory sense. The law provides that the state board of dentistry MAY issue temporary certificates to would-be dentists in advance of examinations if it sees fit.

The board has been refusing to do this. The attorney general says there is nothing in the law to compel it to do so. So applicants will be regularly examined before they can practice. On the other hand, the board may be compelled to increase the number of its regular examinations if the demand becomes strong enough.

To the Editor THE DENTAL SUMMARY,
Care Ransom & Randolph,
Toledo, Ohio.

Dear Sir—In behalf of the North Philadelphia Association of Dental Surgeons, I would inform you of the organization of this society, having as its object the mutual help of its members and the advancement of the profession. Meetings are held monthly, and membership is governed by the Code of Ethics. Officers are as follows: President, Dr. E. H. Mentzer; Vice-President, Dr. R. E. Denney; Secretary, Dr. Richard Souder, 148 W. Lehigh ave.; Treasurer, Dr. W. C. T. Bauerle; Editor, Dr. H. H. Shepler.

Very truly,
H. H. SHEPLER.

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX NOVEMBER, 1910 No. 11

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society

and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. BETHEL, M. D., D. D. S., Editor-in Chief

DISTRICT EDITORS

District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple
St. Louis,	Dr. E. E. Haverstick, Boyle and Maryland
Kansas City	Dr. Martin Dewey, Argyle Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe St.
Los Angeles	Dr. B. Frank Gray, Security Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Buffalo	Dr. J. Wright Beach
Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Louisville	Dr. H. B. Tileston, Equitable Bldg.
Memphis	Dr. D. M. Cattell
Atlanta,	Dr. Thos. P. Hinman, 4th. Nat. Bank Bldg.
N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Richmond	Dr. F. W. Stiff, 600 E. Grace St.
New York City	Dr. W. H. Sieberst, 1 W. 34th St.

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

HOW TO MAKE A DENTAL PRACTICE PAY.*

By Frederick Crosby Brush, D. D. S., New York, N. Y.

I AM NOT going to read a paper to you tonight, not that I was too busy to prepare one, but because I understood that you wanted me to just talk to you, so if I ramble considerably I trust you will understand and forgive. I shall not try to use fine-sounding phrases or quote poetry, but just tell you in a simple way about some of the things that have been gleaned from years of hard work and a varied experience. A good deal of it I have had to root out for myself, but it is impossible to gain very much without owing a great deal to others. So much has been given to the profession by the men who have gone before us that the only way we may hope to pay that debt is by each one contributing what he may to the common fund.

---

*An address delivered at the Annual Banquet of the First District Dental Society Detroit, Mich., February 12th, 1910.

The subject that I had in mind for tonight was the "Thirtieth Day," but when I arrived here this afternoon I found that the program said I was to tell you "How to Make a Dental Practice Pay." Well, that is something that I have been trying to find out for some time, but I will gladly tell you what little I have learned about it.

Much to the consternation of some of the men in the profession I have persisted in saying that dentistry is a business, and perhaps it might be well for me to state here why I take this position, because it may have a bearing on our discussion this evening. The simplest definition for business that I have found is that given by a man well versed in political economy, which is, "Business is the exchanging of anything for something." When one broaches the subject of business to some of our professional brothers they raise their hands and say, "But that is not ethical." So before we go any further with this subject I would like to give you another definition, one of my own, it is: "Ethics is being fair with everyone, including yourself." With these definitions to guide us we can take up the subject with considerable freedom.

In primitive days business consisted merely in exchanging the necessities of life. As time went on and social life became complex, more was required in the way of necessaries, more exchanging took place and owing to the different values of things it became necessary to have some medium for measuring these values and some form of what we now know as money came into existence. As time went on, the different pursuits or kinds of business were classified as a means of convenience and identification. The exchanging of commodities or purely tangible things developed into what we know as commerce or mercantile business. During this same period of evolution it was found that there were things of value in the way of knowledge that could be exchanged, and so men devoted themselves to acquiring such knowledge and in this way the professions came into being. In our own profession—medicine—the general fund of knowledge became so great that no one man could acquire or exchange it, and so it was gradually divided into the physician, the surgeon, the oculist, aurist, dentist, etc. And now our own particular branch is subdividing and so it will go on, but no matter how much of this takes place, it is always possible to trace the way back to that fundamental law of business, the exchanging of anything for something else. So I maintain that dentistry is a business and that we are business men, but that we are, or should be, professional business men in contra distinction to commercial business men. The professional man renders services, the commercial man sells materials. The professional man who aims to sell his materials, be they either fillings, plates, or bridges, and charge for them at so much per, is merely a skilled artisan with an undeveloped commercial instinct. The true professional man renders a professional service by giving the best of his knowledge, skill, ability and honesty to his patient, and for that which he thus gives, which has exchangeable value, he should and must receive something in return.

There are some fundamental principles of business which are applied honestly and successfully in commercial life and there is no good reason why, if they are good principles and honest ones, they cannot be successfully applied to a professional business as well. Let us see if we can draw some comparisons and apply some of the principles to the conduct of a dental practice.

Let us assume that a young man has decided to take up mercantile business as his avocation in life. What is the first requisite that he must obtain? He must have capital. This capital will be invested in a stock of goods that can be exchanged. This stock of goods then becomes his investment. Between the time of acquiring the merchandise and the delivery of it to the consumer there will be considerable expense involved, which in commercial life is grouped under one heading and styled the cost of distribution. This covers rent, heat, light, salaries, delivery and in fact any and everything that pertains to the cost of conducting the business. Now the amount of the investment plus the cost of distribution determines the cost of the individual article. No good merchant would think of placing a selling price upon an article until he had first determined its cost; I think you will agree with that.

Now, suppose that the young man, instead of entering mercantile life, is going to take up dentistry. What must he have? He must have capital. That capital he invests in an education. That will represent his investment. After he has made this investment in a stock of knowledge and skill he has to deliver it to his patients, who are the consumers so to speak, using commercial terms, and all that enters into the expense of rendering his services to the patient comes under the heading of "distribution." Once more the investment plus the cost of distribution represents the total cost and must be considered in determining the selling price, but I find when meeting dentists all over the country, that very few of them have any idea of what it costs them to perform any operation. They have automatically fixed the selling price, or fee, if you please, but they know absolutely nothing about what it has cost them to render the service. They are not good business men. They have fixed a selling price without knowing the cost. You may think it is a pretty difficult matter to figure out the cost of such an intangible thing as knowledge, skill, ability, etc., and so it would seem, and yet if we will apply the same methods that are used in commercial business to arrive at the cost of an article, I think we can arrive pretty definitely at what our operations cost us. Let us see if we can work out the problem. First, there is the capital to be invested in an education. The amount of this investment may be arrived at by taking the cost of tuition plus the cost of living during the entire period and an amount for lost earnings. This latter is a legitimate charge against the investment, because if the young man was using this same amount of time in some other pursuit he would probably be earning about twenty dollars a week. A fair figure for the total cost of obtaining a professional education has been placed at about $5,000.00. This is a permanent investment and should return at least six per cent. a year. The next investment is for the equipping of an office. The furnishing of a reception room, operating room, laboratory, etc., will probably require about $1,500.00. This is also a permanent investment and should return six per cent. Now let us consider the expenses, or cost of distribution. First, there is the interest on the investment, which amounts to $390.00. As the equipment will need to be renewed once in about ten years an allowance of ten per cent. must be made for depreciation ($150.00). The next item will be for rent, which is placed at $400.00 will probably cover heat, light and janitor service. A young lady assistant will add probably another $300.00 to the expense, and incidentally I might say that this is one of the best business investments that can be made. The next is that of general expense—every dollar that you spend for dental magazines, every dollar that you pay for dues to your society, every dollar that you spend for attending a dental clinic or meeting is part of the expense connected with the business and should not come out of your personal pocket but should go on to the general expense account. Everything that pertains to the maintaining of the business or increasing your efficiency is expense and part of the cost of distribution. We will place this figure at $300.00. The dental supplies we will place at $300.00.

Dr. ——. Your supply bill is too high.

Answer. That will depend upon the kind of practice; I have had figures as high as $1,500.00 given me; but it is not the figures that I want to get into your heads, simply the methods.

Now comes the question of a salary. What would you have to pay a man to conduct your practice if you were compelled to give up for a time; some one to carry on the business as you are doing?

A member. $20.00 a week.

Answer. Why, doctor, bricklayers in New York get $35.00 and $40.00. Men without a bit of education, who have never invested a dollar for anything more than a trowel and a pair of overalls, and nothing required of them in the way of a social position to maintain. But you are professional men who have invested $6,500.00, who assume responsibilities and of whom much is expected. Suppose we say $50.00 a week, that will be $2,500.00. If you would have to pay that to someone else you surely should pay it to yourself.

A member. Can you tell us what the average net income of the dentists of the United States is?

Answer. I cannot tell you that, but the last figures that I had from a reliable source regarding New York State was: for physicians, $15 to $18 per week; dentists, about $15; ministers, about $9. I have called for figures on the United States, but have not received them yet.

A member. I heard an official of a large supply house say that the average dentist's income in the United States was approximately $1,000.

Our estimated expense account will now be something like this:

Interest on investment	$ 390.00
Depreciation	150.00
Rent, etc	400.00
Assistant	300.00
General expenses	300.00
Dental supplies	300.00
Salary	2,500.00
Total	$4,340.00

We now have a total of some $4,300.00 which must be earned and collected if we are to receive a salary of $2,500.00 from the business. How can this be arranged and provided for?

There are 365 days in the year. In a manufacturing plant where intricate machinery is in use it is found that these machines must rest if their efficiency is to be maintained. The human machine, the most delicate of all, usually gets the least rest of any. A man will spare a piece of machinery that he has had to pay something for but he will wear himself out by not taking sufficient time to recuperate and to get the rest that is necessary in order to maintain the highest efficiency. In the mortality records of the life insurance companies the dentists are placed at 45 years of age. We wear ourselves out the quickest. We are in a most trying profession; we burn up our energy, we use our eyes, our muscles and nerves and wear ourselves out quicker than any other class of men engaged in earning a living. That being the case I do not think it is good business policy for any dentist to work on Sunday. I do not think that one per cent. of the so-called emergency cases that come to us should really be classed as such; and for no other reason should a man work on Sunday. We have been working on Sundays – Why? Because we have been apeing the physicians or more likely because some one has asked us to do so. When we let our patients get an idea that they can get our services at any old time they soon begin to think we are any old sort of a dentist. If you will take the trouble to study human nature and the American character I think you will find that most people place the greatest value upon the things that are hardest to get. They like to go to the man who is busy; they have an idea he must be the best man. When they cannot get an appointment under two or three weeks they are all the more anxious to have it. It is good business policy *not* to work on Sunday. It is *not* good policy to begin work at seven or eight o'clock in the morning. It is *not* good policy to work until six or seven o'clock at night. It is all very well to be accommodating, but when patients find that a dentist will work outside of regular office hours for the mere asking they soon get the impression that he is mighty glad to get the work and will take advantage of him in the matter of fees and the payment of bills. When you are asked to make such an appointment and some trivial excuse is given, just say, "No! My work is very trying and I cannot maintain my high standard except for a limited number of hours. I must have rest to be efficient and I am sure you want only my best services." Make this plain to your patient and he will find it convenient to come during reasonable hours and will have a higher respect for you and dentistry.

Now, let us consider the number of days that go to make up a professional man's year. Professional men should not work on Sundays—laborers do not—why should we? Because we have invested money in an education and have a social position to maintain, should we feel that we must wear ourselves out quicker than they? Certainly not. The Lord made the world in six days and rested on the seventh. This is good philosophy and good political economy, and it behooves us to follow the example. There are eight holidays—days that other people enjoy—why shouldn't we?

Now, how about a rest? How much of a vacation should a professional man have? I think that for men engaged in such a trying and confining occupation thirty days during the year is little enough. This will leave 275 days in which to earn and collect about $4,500.00 in order to pay expenses and have an income of $2,500.00; this will be about sixteen dollars for every working day. If one has office hours from 9 to 5 and works the full eight hours the cost will be two dollars an hour; but one cannot depend on working the full eight hours for there will be considerable lost time changing patients, interruptions, etc., so the cost will be nearer three dollars an hour for each available working hour. Now, is that a fair way of arriving at the cost of your services? There is no other profession where time is such an important item in the transactions as in the general practice of dentistry. There is scarcely any operation performed but what is a digital one, and it means time, and for that reason I think that figuring on a time basis is the fairest way of arriving at the cost of any given operation. You know that you must earn that much every hour in the day for 275 days in order to meet expenses and have a salary of $50.00 a week for yourself.

At another meeting where I spoke on this same subject I used the figures given me by one of the men in the audience and upon questioning the average time consumed for certain work and the charge he was accustomed to make for it, I demonstrated to him that as a business proposition he was losing about eighty cents on every filling of that nature.

From thinking and figuring along these lines I have become convinced that the hour basis as a means of arriving at the amount of a fee is a fair one to the patient and the operator. By this method you are not going to overcharge a patient for one kind of work and not be properly paid for other services. It is perfectly fair to all parties concerned, for you can figure definitely what an operation costs and on this you are entitled to a reasonable profit.

At this point I might say that I have found that some of the men who have tried to follow my teaching have made a bad blunder on one or two points. The principal one is that they have laid too much stress on time and exaggerated the importance of the clock to the patients instead of impressing upon them the right idea that it is the service rendered that is of value and for which the charge is made. It is not well to talk about time to your patients, that is merely your own method of arriving at the amount of the fee that you should receive for the service rendered.

Now we come to the question: How can a man increase his income if his practice is conducted on the hour basis? This will be regulated by the law of supply and demand. All work will be done by appointment, allotting sufficient time to perform the work in hand in a thorough manner. Make just enough appointments to fill each day and no more; when one day is comfortably filled move on to the next one. When you are able to keep your appointment book filled for two or three weeks ahead at, say four dollars an hour, then you are justified in beginning to ask five and then on to six and so on. It becomes a case of supplying the demand just as it does in commercial life. You cannot work for every one in the community; it is a physical impossibility. You have not enough hands nor days nor hours for that. You can only do good work for a limited number of people in a limited number of hours and when this time is engaged and there still continues a demand for your services you are fully justified in asking an increased fee per hour. There is no limit to the amount that may be reached in this way except as it is governed by supply and demand.

As to the matter of doing good work—when raising your fees you must deliver the goods, and if you realize that you are going to be paid for your services and for all the time it takes to render them you are not going to slow up, because you are honest and want to give full value for what you receive. You are going to do as much work in that hour as you can, but if that work is paying attention to details you are going to do that, so that every operation will be right. You will soon find that you can afford to do good work and cannot afford to do poor work; and taking time to do good work will bring its reward in added reputation and increased business.

One of my best patients formerly went to a man with a very large practice; so large that he didn't make appointments; he said he couldn't. When this patient first came to me it was by appointment and a definite amount of time had been reserved and when that time was up the patient was dismissed. During the third appointment this patient remarked to me, "Doctor, your practice is not as large as I was led to expect from what I heard of you." "Why do you think so?" I asked. "Why!" she replied, "The man I have been going to has a tremendous practice. I have seen as many as twenty people in his reception room waiting for him, and I have frequently had to wait several hours before he could attend to me."

"Isn't your time worth anything?" I asked. "Why did you leave him?"

"He was so busy that he would get me in the chair and then leave me to see someone else and this was a regular performance, and I finally reached a point where it got so on my nerves that I could not stand it."

"Do you like my way any better?" I inquired.

"Yes, indeed; I have been here three times and there has been no one waiting and you have not left me to even see anyone else; you do not seem nervous and so I am not."

"Well, now, you have spoken about the size of my practice. When you came in did you meet someone going out?" "Yes." "When you went out the other day did you meet some one coming in?" "Yes." "Well, that is the way it goes all day long. I do not want patients sitting around in my reception room; it makes everyone nervous, and if I happened to work a little more rapidly than I am accustomed to, or than you thought I should, you would have the impression that I was hurrying up your work so as to get at that of the next patient and you would soon feel dissatisfied. I do not conduct my practice in that way."

Gentlemen, there was a time when I had an ambition to have a big practice like this other man and had a good start toward it, when I suddenly "woke up" and then I cut my practice nearly in half in about three months, but I increased my income a thousand dollars by doing it.

Let me say here a few words about card systems. The purpose of system is to simplify, not to complicate. Sometimes men lose their bearings on this subject and develop such a complicated set of cards that it would take all of one person's time to keep them in order. I want to eliminate that danger as much as I can. I use cards for the examinations, but it is the card with a chart which is to be the permanent record of all operations. On this chart all conditions of the mouth requiring professional services are marked in pencil. Except in cases of emergency no work is done at the time of the examination. All operations are done by appointment and a definite amount of work is planned for each engagement and sufficient time is reserved for it. A certain hour of the day is set aside for consultation and examinations and the best time for this is the last hour of the afternoon; at this time a man is usually tired and is not up to the highest standard of efficiency and should not undertake operations that will be a tax on nervous energy.

When the examination is made is the time to discuss the work with the patient and do not hesitate to talk about the money end of it. With patients who are familiar with you and your methods, and whose financial standing you know about, it is not necessary, but with new patients it is no more than fair that they should have some idea about what the fee will be for the services rendered, for I think it is very unfair to run up a bill against a person which may be more than he may feel prepared to meet at that time. If one is accustomed to note the usual time required for various operations it is quite possible and proper to make an estimate as to the probable amount of the total fee. In quoting a figure be sure and make it high enough to cover any contingency and do not mention but one figure. If you give a minimum and a maximum figure patients will invariably fix the lower figure in their mind and expect that to be the amount.

Dr. Wood. I want to ask you to show us on the board how you render a bill.

Answer. It is very short:

MR. J. S. BURNS
For professional services rendered
from ....
to ....
$........

Dr. Wood. The reason I asked you that is this: Some men have the habit of rendering itemized statements.

Answer. How under the sun can you itemize professional services? You can itemize merchandise or if you are selling materials, well and good.

Dr. Wood. Suppose a patient asks for an itemized bill, what are you going to say?

Answer. I should probably answer them to this effect: Referring to my records I find that there were — appointments, occupying so much time, for which my fee is so much. If there was a laboratory charge involved, this is stated as such and the amount given.

Dr. Wood. What is the difference between rendering a bill not itemized and sending a chart with the statement, having the location and kind of work marked on it?

Answer. What does the patient care about your chart?

Dr. Wood. I find that my patients do care.

Answer. Did you educate them to it? What for? They never knew about a chart unless you or some other fellow educated them to it. What is the use of putting material into the hands of people to arouse their questioning? There you get psychology and suggestion again. What is the use of putting suggestions into their heads, making trouble for yourself?

Dr. Wood. You say—putting trouble into the hands of patients that will arouse their questions. I put something into the hands of patients so there will not be any question.

Answer. If a surgeon operated on you for appendicitis and rendered you a bill, would you expect it to contain a chart of your interior anatomy with a line drawn across it to show where he cut the darn thing off?

Dr. Muir. What should a man do about broken appointments?

Answer. Send the patient a bill for the time.

Dr. Muir. In an average practice where they are not educated to it?

Answer. Educate them to pay. Anyone that fritters away my time and does not value my services I do not want as a patient.

A member. I take it you encourage your patients to ask for an estimate as to the cost of their work. It strikes me there is a little inconsistency there. You encourage their asking for an approximate price, which would have a tendency to promote their expecting an itemized bill.

Answer. I do not see it quite that way.

Member. Then why your price? They come to you, not for your price, but for your services.

Answer. They do come to me for services and I certainly want to know whether they can pay for them or not.

Just a point about collecting. After the examination has been made and the work agreed upon I step to the desk with the patient and make out the chart, taking the name, address, references, etc. Then I say to the patient: "Your work will probably amount to about so much, how would you like to make the payments?" The patient will, in effect, ask how you expect it. I state that it is customary to have a retainer—I do not like the word deposit—and the balance can be arranged as the work progresses. You thus give them an opportunity to tell you whether they are going to pay the bill or not, and how they are going to pay it, and this is all jotted down on the record at the time and saves questions afterward. If I am not going to get the money I do not want to do the work.

In a recent journal I read of a surgeon who was patting himself on the back because he had a practice of $25,000 a year but only collected $5,000 of it. That man ought to be read out of the profession. Any man who will do $25,000 worth of work and collect only $5,000 for it is working an injury to the rest of the profession.

Dr. Buttrick. Don't you think it a very bad policy to bring a suit in order to collect an account?

Answer. I think I should only do it in extreme cases. The question of collecting accounts is one that has never been satisfactorily settled. I have tried many ways, including lawyers and collection agencies, with very indifferent success. I find that I am the best collector I can get, which is due almost wholly to my business system, but the next best collector is my young lady assistant. When patients ignore bills and letters I give the young lady the bill and she calls at the patient's residence or office and sends in word that she will wait for an answer. We find that they will pay her when they won't pay me.

I believe in rendering statements as soon as work is completed, just as is done in commercial business, just as the dental dealer renders us a statement when he delivers our supplies. You know then whether you have had the goods or the services and there will be no occasion for questioning the amount afterwards. The bill is due just as soon as the services are rendered and I follow up my statements closely and do not hesitate to ask for a prompt remittance.

A member. That is a good point about sending a statement at once. A few minutes ago you spoke of making out a statement which said, "so many appointments." Why do you put that in your statements?

Answer. That was given in answer to a request for an itemized statement, it is not put in any bill that I render.

A member. I went to an osteopath a few days ago and he stretched my neck and rendered a statement of so many calls and so many treatments, so much.

Answer. Suppose he was to itemize it: would he say: To stretching one neck so many inches and send you a diagram of the vertebra? I do not think such things are necessary. When questions are asked is time enough to answer them.

A member. You spoke a while ago about a statement in which you mentioned a fee for laboratory services. I would like to ask if you discriminate in any way whether you are operating at your chair or in your laboratory?

Answer. Yes, I do; because I think a man should in fairness to the patient. There is a decided difference in the skill required and in the services rendered. Laboratory work is purely mechanical and something that a laboratory man can do. If you see fit to do this work yourself that is your own affair, but it does not appeal to me as being fair to charge the same fee per hour for doing mechanical work that you would for the time spent at the chair doing surgical work.

A member. Suppose a patient declines to pay the price you ask but offers to pay a smaller sum, saying they can get it done for that elsewhere? What are we to do?

Answer. I don't think you are justified in giving your services to anyone just because they ask you. If it costs you $4.00 to perform an operation, I don't think you should do it for $2.00 just because they want you to.

A member. Yes, but it is done.

Answer. That is the trouble with the profession, they are not good business men. That is why we are talking these things over tonight. It has been done very largely because men have not known what an operation costs them. Their only idea has been the cost of the materials used, they forget about their own salary, the rent and other expenses.

Gentlemen, the business side of a practice is the one undeveloped field in dentistry, and it is a subject that covers an immense amount of ground, more than most of us have realized. It is not possible to more than scratch the surface in a talk of this kind, but it will well repay everyone to give the subject careful thought and consideration.

The largest medical fee of which we can find record is that said to have been given to the blind physician, Dr. Gale, of Bristol, who received $250,000 from a wealthy patient, whose knee he had cured by electric treatment.

BUSINESS AND DENTISTRY.*

By L. P Bethel, M. D., D. D. S., Columbus, O.

BUSINESS and Dentistry is a subject that should interest us all, for it is no less a professional man's duty, would he be most successful, to understand and practice business methods, than the duty of a man engaging in some commercial pursuit.

The dealer charges for his wares, the professional man for his services, and yet both alike have in common business matters such as keeping records of business done, accounts to pay, accounts to collect, etc., and it is just as necessary for the one to understand the best methods involved in such duties, as it is for the other. The dentist, or prospective dentist, should therefore make a study of business methods.

It is not necessary, in addressing this body of professional men, for me to speak of the importance of having an inviting office, orderly arranged and appropriately furnished, cleanly in appearance, as attractive as possible with adequate equipment, for I take these things for granted and shall proceed to consider some of the ways and means that help to make the professional man a successful practitioner.

If you have been observing you have noticed the greater progress some dentists make than others in practice. And have you ever noticed two dentists with comparatively the same skill starting in practice in the same community at the same time, and how one develops a practice much faster than the other? And how some dentists have a clientage so large that it would seem almost impossible to serve all?

Of such men one often hears the remark that Dr. Blank is a "lucky chap"—or, that he is "playing in great luck." But if you will investigate carefully you will find that these results are not brought about by chance. That there is a cause, and something besides the real skill the dentist may possess. Something that assists him in his acquaintance with people; in securing their confidence; in their selection of him for their dentist. Call this something Personality, or what you will, it is a valuable asset in the building and maintaining of a dental practice.

And this should bring each one of us to the realization that no one is so perfect but that he can improve, and the importance of frequently and searchingly investigating ourselves, our habits and peculiarities, eliminating that which is objectionable and developing that which is desirable.

After carefully observing and comparing our progress with that of others if we find it is not what we believe it should be, it is time for self-investigation to find the cause. This may be difficult to do, for habits are tenacious and often performed unconsciously. I once knew a dentist who had a habit of arguing with everybody and about everything possible, making himself oftentimes disagreeable, and then he wondered why he was not more popular.

Self-investigation is one of the principles of good business.

---

*Read before the Michigan First District Dental Society, Detroit, March 1910.

Tact is one of the most useful factors in the business world and is of great importance in a dental practice. The dentist should not only be able to read human nature as patients present, but possess the tact of saying or doing just the right thing at the right time to impress the patient and gain his confidence, or create imagination regarding what should be done.

In speaking of the employment of tact and imagination I will cite one of many illustrations, in the little book: "Imagination in Business," by Lorin F. Deland. He says: "I shall try to confine myself to instances of action which proceed forth from imagination. We were about to consider the simplest illustration of this relating of one thing to another in business. Let me tell the story of two bootblacks:

"These two boys, of about the same age, I found standing one Saturday afternoon, on opposite sides of a crowded thoroughfare in Springfield. So far as could be judged, there was no preference between the different sides of the street, for an equally large crowd seemed to be moving on both sides.

"The bootblacks had no regular stand, but each had his box slung over his shoulder, and, standing on the curbstone, solicited the passers-by to stop and have a shine. Each boy had one 'call,' or method of solicitation, which he repeated at regular intervals. The two solicitations were entirely different, but each was composed of four words. They never varied. Yet one of these boys, by the peculiar wording of his solicitation, secured twice as much business as the other, so far as one could judge, and I watched them for a long time.

"The cry of the first boy was, 'Shine your shoes here.' It announced the simple fact that he was prepared to shine their shoes. The cry of the second was, 'Get your Sunday shine!' It was then Saturday afternoon and the hour was four o'clock. This second boy employed imagination. He related one attraction to another; he joined facts together; his four simple words told all that the first boy said, and a great deal more. It conveyed the information, not simply that he was there to shine shoes, but that tomorrow was Sunday; that from present appearances it was likely to be a pleasant day; that he, as a bootblack, realized they would need an extra good shine; and, somehow, the sentence had in it a gentle reminder that the person on whose ears it fell had heretofore overlooked the fact that the next day was the Sabbath, and that any self-respecting Christian would wish his shoes shined before he repaired to the sanctuary."

Again, honesty and truth should always be adhered to in our dealings with others. A reputation for integrity is a good asset in any business.

Regarding fees, conditions are so variant that it seems impracticable to attempt to establish set fees. Each dentist must determine for himself what is just compensation for service rendered. But whatever the fee, the dentist should see that the patient gets value received in his work. And where there appears an element of doubt regarding a fee, make it plain to the patient that he has been justly dealt with. I will cite an instance in my own practice where a patient felt that he had been overcharged for a gold filling. It was a large compound cavity, sensitive, and annoying in mastication, and I filled it with gold. This was before the days of the cast gold inlay and I felt that the fee of $10.00 was a moderate one considering the amount of time and hard work that filling entailed. But the patient apparently saw but one side of the question, and that was a charge of ten dollars for a single filling. I saw that an understanding was advisable and asked him if he had read recently in the newspapers about the decision that was handed down in some court where a dentist had been sued for extracting the wrong and a sound tooth for a patient, and a verdict of one hundred dollars was rendered in favor of the patient? He remembered seeing the headlines: "Good teeth are worth $100.00 each." And for argument I said, "one hundred dollars is a small estimate of what each sound tooth is worth to any person, but we will take that as a fair price. Now, this tooth that I have filled was annoying and troublesome to you. Its condition prevented the full use of adjoining teeth in the important function of mastication of food. It was, in a way, worse than no tooth in that location in the decayed condition that I found it. I have restored it to usefulness; made it virtually as good as a sound tooth; made it worth the $100.00 to you, for which you are paying me ten dollars, so by this work I have added ninety dollars to the worth of your masticating apparatus." He saw the matter in a new light and at once admitted that for the service rendered the fee was, after all, a very moderate one.

This argument made him a satisfied patient and I cannot begin to tell how many patients he referred to me after that.

A satisfied patient is another valuable asset for the dentist.

Unfortunately, however, it is next to impossible to keep all patients satisfied. No matter how satisfactory the service may have been, some patients will occasionally become piqued if the dentist is too persistent in pressing the payment of an account, or from some other cause. And more or less unscrupulous persons will insinuate themselves into your practice. Possibly now and then someone with the object of seeking an opportunity for a suit for damage or malpractice, surmising that the dentist, although really blameless, would prefer to settle the affair on a money basis rather than be annoyed by being brought before the public in such a light. For, from whatever cause a suit may arise, it always brings the dentist conspicuously before the public in an undesirable way. Gossips are ever waiting an excuse to talk, and there is no telling what harm may grow out of the institution of a suit, other than from the suit itself.

And then to defend a suit takes time from a dentist's practice and causes him much anxiety and nerve strain, to say nothing of costs and penalty if he loses. And if the accuser should win it encourages other unscrupulous persons to seek an opportunity to try the same thing and perhaps on some other dentist.

Now there is a certain protection against these damage and malpractice suits that the dentist can obtain if he so desires, for a few of the large insurance companies are issuing this special protection policy.

Under the agreement in these policies, when a claim is filed against a policy holder, and upon notice by him to the company or agent, the company assumes the entire burden of defending the suit. It agrees to use every effort to extinguish the claim before it develops into a suit, but if this cannot be done, the company contests the suit vigorously, without expense to the policy holder. If the policy holder desires to associate his personal attorney with theirs, it is allowed and the company pays his fee.

In some cases the policy holder may have been negligent, and desires a compromise before his negligence can be shown in open court. If he requests it, the company will make the settlement for him, paying the amount thereof. No claim, however, will be settled without the assured's consent. If a judgment be recovered from a policy holder, the company pays the amount up to the limit of the policy.

When people and lawyers know that their fight for damage must be made against a company with perhaps a million dollars in assets to combat it, few, if any suits will be brought unless there appears to be ample cause for suit.

This insurance is even less expensive than accident insurance, and, like it, if something happens to you, it's a mighty good thing to have.

I have spoken incidentally of collecting accounts. Here is one of the greatest problems with which the professional man has to deal.

Unless you know to a certainty the reliability of a patient, particularly a new patient, it is well to ascertain about his credit before the time of the first appointment, that you may be prepared, if found necessary, to explain to him how you expect payment to be made, or to exact a deposit before beginning any operation.

It is better to not do the work at all than to be cheated out of your fee after the work has been performed. It is a common practice to consult Dun's or Bradstreet's for the financial rating and credit of men, but these books contain the names of comparatively few of the people who comprise the clientage of the average dentist, and there are more useful aids. In some places the dentists have a "blacklist" which is admirable as far as it goes. Then there is the "Grocers' Red Book," published for the use of retail grocers in the various cities, containing information about the financial standing and credit of the heads of nearly every family in the community. One can easily gain access to this book through the good graces of his grocer. Or, information can be obtained from the credit rating agencies.

Yet, with all precaution, one finds himself with outstanding accounts to collect, and often in the aggregate representing far more money than he can afford to allow to remain idle. It would be different were this as it is in some countries, for instance Germany, where, I understand, patients expect the privilege of allowing accounts to run for a variant length of time, but who fully expect and do pay interest on the amount of such indebtedness when the account is finally settled.

There being no such prevailing custom in this country, it is more business-like to send a bill the first of each month for professional services rendered during the previous month. Patients should be given to understand that this is the manner in which you conduct your business and that a reasonably prompt response is expected. If the account is not paid by the first of the next month, send a statement to the patient by your office girl, or by mail, with or without some written request.

In urging, by letter, the payment of an account, always be cautious of its wording, for it is a federal offense to send some forms of threatening letters through the mails. You can threaten suit, or anything that is legal, but beware of anything that could be construed as slander.

Dr. Bryce, editor and publisher of *The Southern Clinic*, has recently given out a plan for aiding physicians in making collections, and he believes it will prove effective without being offensive, for it has proven so in the trial he has given it. He states that physicians are keeping themselves out of hundreds of dollars annually that they can easily get, without offending their patients, by using his suggestion. It is this: He has statements printed in three ways. To the first lot he has a prefix printed as follows:

> "When you send for a doctor it is because you need him and expect him to come. When he sends you his bill it is because he needs your assistance and expects it."

If statement No. 1 fails to bring the money, statement No. 2 is sent. This form is the same as the preceding, but it carries the following prefix:

> "If you send for a doctor twice in succession you would be in great need of him and would think very badly of him if he neglected you under such conditions. This is your second bill."

If No. 2 fails to bring a remittance, No. 3 is sent. It contains the following prefix:

> "When a drowning man goes down for the third time his friends have lost their chances to save him. This is our third appeal to you to treat us fairly. Don't drown a good friend."

This usually brings the money.

Dr. Bryce adds, that this system will settle nearly every bill you have owing you by people worth attending. Those who do not respond to these bills should be refused any further attention. Perhaps something of this sort could be effectively used by dentists for certain accounts.

In sending bills and statements we are too apt to bill only for the larger amounts owing us and pay little or no attention to the small accounts, and this is a mistake. A friend of mine asked me one day if I had ever thought what it meant to allow the small account to go unpaid. He said that in his practice it sometimes meant a great deal and that he knew a dentist who had gone for months at a time in the most severe financial straits while hundreds of dollars were owing him by people who could pay just as well as not.

Many people fail to appreciate the importance of paying small bills promptly. Those accustomed to dealing in large amounts are especially apt to look upon the small debt as of no consequence and allow it to stand unpaid for an indefinite length of time. They do not realize that the average dentist has in the aggregate a large sum tied up in these small accounts or what it would mean to him if they were all paid promptly.

Of course, there are patients whose circumstances are such that often they cannot pay promptly, but whose intentions are good, and these are worthy of consideration. But persons who can pay but just let the account stand, are the ones who cause hardship to others and with such, leniency is scarcely a virtue even through fear of giving offense.

It is a risk to let people owe you too long. It is strange how much better people appreciate your work after it is paid for. There is an old saying, "Short accounts make long friends," that is worth keeping in mind. If in attempting to collect some accounts all of our ordinary means fail, they should be placed in the hands of a reliable collecting agency, and, if necessary, resort to the "justice court" if the debtor is a freeholder or liable to become one. A judgment is readily obtained by presenting an itemized bill to the court and having a transcript filed. This acts as a lien on any property he may possess and includes costs and interest from the time the original bill was rendered.

All bills for minors should be charged "in care of" father, mother, or guardian, for without this precaution the claim is nil, as children are not responsible.

Always get the consent of parent or guardian before beginning work for a minor.

It is good business policy to keep your own credit good by paying your bills promptly. And in paying bills it is best to do so by bank check and then you have a double receipt and check. It is unbusiness-like to pay out or receive money without receiving or giving a receipt.

If you will take the pains to give a receipt for all moneys received in practice, and place the name of patients, date and amount received from each on the stubs, and preserve the stubs, you have in them a correct cash account of money received during the year and a check against error in giving due credit on account.

It seems unnecessary to remind you of the importance of keeping a full record of operations performed, and of keeping your books in an accurate and tidy manner. Carelessly kept books are no credit to a skilled dentist, and are much more liable to be questioned in case it becomes necessary to submit them in the court room.

Keep your possessions well insured.

Take the precaution to cash no sight draft or check unless certified to by the bank upon which it is drawn, or by the person upon whom it is made payable.

Don't sign notes or bonds for another person unless ample security is given. Banks do this and it relieves you of the responsibility.

It sometimes becomes a question with us whether we should charge for broken engagements. Courts have decided that the dentist has a right to charge for the time lost if he does not employ it for another patient. Equity states that "These rulings are justified by the fact that a professional man's time is the capital whereby he earns a livelihood. If a certain part of that is set aside and not used, the one causing the waste by his failure to arrive at the appointed time, should compensate the dentist for this loss of capital. But if there is no loss, there should be no penalty."

Now, what I have given you in this paper is by no means all that could be said on the subject, but perhaps enough to illustrate the importance of the business side of dentistry.

DISCUSSION.

Dr. A. L. LeGro: In this very excellent paper of Dr. Bethel's, much has been presented that is very worthy of our consideration. The subject of business and dentistry is a broad one and capable of many different constructions, and it is not surprising, therefore, that the essayist has confined his paper to but a few of the many points that might be brought up under this particular title.

We are gradually being forced to the conclusion after all that dentistry is a business, not a commercial business exactly, but a business nevertheless, and if we are going to do justice both to our patients and ourselves, and we cannot do one without the other, we are going to resort to business ideas and methods. We devote so much time to the practice of our profession that little attention is given to the other side of our vocation, i. e., business.

The essayist has very logically led us up to the realization that much importance must be "frequently given to searching investigation of ourselves, our habits and peculiarities, eliminating that which is objectionable and developing that which is desirable."

Self-analysis, I call it, must be resorted to at regular intervals, for it is the greatest fundamental of success in any vocation. If we should ask the following questions of ourselves every month with an honest inclination to remedy defects so far as possible, we would be successful men:

(1) Am I a real success?
(2) Am I neat?
(3) Am I gentle but firm?
(4) Is my personal appearance pleasing?
(5) Is my office as inviting as I can make it?
(6) Are my associates of the best?
(7) Can my conduct at the chair be improved?

(8) Am I getting the most efficient service from my secretary and maid?
(9) Do I make a study of purchasing?
(10) Are my books posted each day?
(11) Do I pay my bills promptly? If not, why not?
(12) Is my credit of the best? If not, why not?
(13) Are my recreations of a healthful and instructive nature?
(14) Do I keep my finger nails clean at all times?
(15) Do I argue with my patients?
(16) Am I perfectly square with all of my patients?
(17) Do I present statements promptly on the first of each month?
(18) Am I active in dental society discussions?
(19) Do I let one patient encroach upon the time of the patient who follows?
(20) Do I thoroughly sterilize instruments after each operation?
(21) Do I put off for tomorrow, that which I should do today?

These are a few of the most important questions that a dentist, to be a thorough success, should ask himself each month. Don't ask them today and put them away forever, but keep your shortcomings constantly before you that you may improve yourself in every possible way.

Now for fees—It is my humble opinion that the man who charges a definite fee for each hour of his services, in many instances, is doing himself, as well as patient, a very great injustice. There are many hours in which the operator is not up to his standard in energy or accomplishment, and to charge the same fee for those hours that he would charge when everything is normal, is a rank injustice to the patient. On the other hand, if the conditions are favorable for the operator to accomplish more work and display more skill in an hour than usual, he is doing himself an injustice to charge anything but a maximum fee.

So I contend that a dentist should base his fees, not on time and materials alone, but upon the "professional services rendered," which should be estimated according to their nature, the difficulty, skill, experience and time demanded. For several years I was of the opinion that to itemize an account when rendering a statement, or by request, was to lower my professional dignity. I contended that a dentist could not itemize his accounts, on the ground that he had nothing to sell at so much per, and skill and time were such important factors in determining the size of fees. Granting such to be true in part, I now contend that it is impossible to keep books without itemizing accounts, therefore the patient is entitled to an itemized statement. My experience has been that a man will pay larger fees more willingly when he sees his account itemized than when it is rendered for professional services. For illustration, we will say that Mr. B. presents himself for treatment and we find that the superior left bicuspid has caries on the distal surface to the extent that devitalization is necessary and that after treatment and filling nerve canals, a large gold inlay restoration is necessary to properly finish the case. Which statement would make the most profound impression on the patient and cause him to most willingly pay the account:

Mr. ....
to Dr. .... Dr.,
For professional services rendered from ..... to date $20.00.

or

Mr. ....
to .... Dr.,

1- 4-10	Devitalizing tr.	$2.00
1- 8-10	Nerves removed and tr.	2.00
1-10-10	Anodyne tr.	1.00
1-13-10	Nerve canals filled	3.00
1-15-10	Gold inlay restoration	12.00
		$20.00

If the first statement was rendered and the patient was dissatisfied, it would be for the reason that he had in mind the filling of but one tooth and that the fee was exorbitant. I have never had any complaints of overcharging since I got out of the false light that I was contentedly basking in, and adopted the more business-like way of treating my patients.

An appointment card should be used at all times possible and should *not* read:

M....................
has an appointment with
Dr. ....
.... at ....M

but,

M....................
has engaged the dental services of
Dr. ....
............(day) ....(month) ....(year)
from............ to ....o'clock...............M

The latter form impresses the obligation and gives the patient to understand that there is a limit to the time allotted and also that he is expected to pay you for that time whether the appointment is kept or not. The acceptance of the card is a binding obligation.

Now, just a few words on business getters, as some are pleased to call it, and which are perhaps apropos of this line of discussion. I am personally acquainted with a young man who a few years ago left a lucrative practice in the country to tackle a big city. Placed entirely on his own resources and being a comparative stranger he originated many novel methods in getting his practice established. To my mind they were perfectly ethical and legitimate, so I will tell you of a few of them.

Every patient that came into his office had a card in a special index drawer on which was recorded the name, nativity, politics, age, hobbies, recreations and idiosyncrasies in as complete a form as possible. Some of these cards took a period of several months to fill with the correct data. He was thus enabled many months later to talk with patients that he had not seen for long periods of time, on subjects that most interested them. It made a profound impression on the patients and he was frequently complimented on his tact and memory.

Another very novel scheme was to have people of the same social strata meet in his office at the same time, in fact, the first five appointments were with people who had been recommended by the same patient, and the dentist informs me that he went without work for five days that he might have those people in the office practically at the same time or following each other so closely that each knew of the other's presence. This system followed up brought people of great prominence into his office and each gave the other confidence before any dental operation had been performed at all. He resorted to many practices such as I have just told you of and if I had more time I could give you more of them.

T. R. Buttrick: In the first place, I wish to compliment the essayist upon the able manner in which he has presented this most important subject. After his paper has been read and the discussion opened by Dr. LeGro there seems but little for me to add upon this question, which as some of you may doubtless know, has long been one of my pet hobbies. I cannot let this opportunity pass without reiterating a few thoughts of my own, which I trust may not have become stale by reason of frequent repetition.

Before doing so, however, I would like first to thank Dr. Bethel for furnishing me a copy of his paper in plenty of time so that I could read it over carefully and digest it well—this, unfortunately, is a courtesy too often overlooked by an essayist, which puts those who are to discuss his paper at a great disadvantage. Furthermore, I think our program committee has done especially well for us this year in having two such capable exponents of proper business methods as applied to a successful dental practice as Dr. Bethel, of Columbus, and Dr. Brush, of New York, who was with us last month. It seems to me that it is equally as important for a dentist to be a good business man as it is for him to be a proficient operator, if he would achieve a success in his chosen profession.

There has been altogether too much reticence upon the question of the *business* side of dentistry, from what has always seemed to me greatly mistaken ideas about what really constitutes the "ethics" of the profession. I am very glad to believe that now there is to be a change in this respect. I am glad that we have had "Brother Bill's Letters"—although I must say that I do not endorse them without some qualifications. I am glad that Dr. Brush could be with us last month and I am glad that Dr. Bethel could be with us tonight. A few days after Dr. Brush's talk I received an engraved card from one of my *confreres* advising me that he would increase his fees after March 1st. Let us hope that some others have done so, although perhaps lacking the courage to publish the fact!

Now that Dr. Bethel has given us some sound advice on business principles, perhaps we may in time develop into good business men. In reading over Dr. Bethel's paper his points all seem to me so well taken that I can really find very little to discuss. Our essayist is rather reticent about the matter of fees, but I firmly believe in the principles laid down by Dr. Brush upon this subject, and have adhered to them since the beginning of my practice.

As far as taking out insurance against damage suits, while it is doubtless a good policy, I must confess, however, that I have never felt the necessity for such action. Nevertheless, I am a firm believer in life insurance, and in sickness and accident insurance, and think the money spent in these premiums is well invested. A limited payment life policy for a young man will prove a better investment than most of the wild cat schemes into which many a dentist puts his hard earned cash, to say nothing of the protection it affords those dependent upon him in case of his death; while the sickness and accident policy with its weekly benefits is a source of much satisfaction when the unexpected trouble comes.

In regard to the collection of accounts, the essayist has given us some valuable suggestions. I think the secret of collecting accounts successfully lies in not making any *bad* ones! When a new patient comes to me the first question I ask is, "Who recommended you to come to me?" The answer is generally satisfactory, but when there is some evasion I seek to learn the last dentist who did work for that person, and then I proceed to communicate with that dentist before the day for the first appointment arrives. If I cannot get a "line" upon him in either of these ways I call up the Commercial Credit Co. for a rating, and their reports have proven very valuable to me. The membership costs $15.00 per year or $60.00 for five years and one dead beat detected before making a bad account will often save much more than the membership fee. Then, too, they have a very good system for collection of slow or bad accounts, and altogether I would heartily recommend them to any of you who may not already be subscribers. Their agent will be glad to call and explain the system to any one of you upon application.

One can often shame a delinquent debtor into settling an old account by writing some little note upon the bottom of the statement, but the "case hardened" ones require something more *stimulating!* However, I think it a doubtful policy to sue an account—the reputation of collecting in this manner is not an enviable one to gain, and furthermore if a patient is mean and small enough to refuse to pay a dental bill he is probably execution proof any way, and I should rather present him with the amount and thus purchase the right to tell him what I think of him.

Dr. Bethel's suggestion about the dentists keeping his own credit good is a mighty sound one. Never let a bill run unpaid unless by previous arrangement with the creditor. It is better to borrow money at your bank and pay interest upon the sum than to let a lot of small bills accumulate against you. Every dentist should have a commercial account with some bank and pay all his bills by check.

Dr. Bethel says that it seems *unnecessary* to remind us of the importance of correct methods of bookkeeping, but from my observation this is *extremely necessary.* I believe that the average dentist's books are kept in a very *sloppy* and most unbusinesslike manner, and I believe that a table clinic upon this subject would be a good thing for some future program committee to provide. I see no valid reason why a patient should not expect to pay for an appointment, broken without sufficient notice. The first appointment I make with a new patient, I give, upon a printed card, at the bottom of which there is a note that states: ''If impossible to keep this appointment twenty-four hours' notice must be given, otherwise a charge will be made.'' This has a very salutary effect and I find I do not get as many broken appointments as I did formerly. In case of sudden illness I do not make any charge, however.

In conclusion, I should like to state that the position I have always maintained upon the discussions of this kind—upon the subject of fees and the business end of dentistry generally—has been taken for what I considered for the best good of the profession at large. I do not advocate exorbitant charges, but I do stand for adequate remuneration for properly performed dental services.

Any statements or suggestions of mine have been made because it seems to me that dentistry is unappreciated and underpaid as a rule, and it is only by a proper education of the laity and a proper business administration of our affairs that we can come into our own as dentists. We may become skillful dentists, but unless we become good business men as well, we shall fall short in our development and shall not command the respect and emoluments to which we are entitled.

SET PRICES.*

By H. F. Marston, D. M. D., Minneapolis, Minn.

THE subject of fees, considered in its entirety, presents too many angles and faces for the preparation of one paper alone; rather should our topic tonight be divided into the various elements, comprising its make-up.

That our fees are inadequate admits of no argument. That we have chiefly ourselves to blame for this condition is equally true. It is upon one or two of the reasons why we are to blame that I wish to talk to you tonight. Considering one cause after another, and at the same time attempting to arrange them in their proper order of magnitude, I invariably find myself returning to what seems to be the chief factor of our low remuneration, namely, ''A Set Scale of Prices.''

I venture to say that nine out of ten of you, if approached by a stranger in your office and asked by him to name a price for placing a porcelain crown upon the root of a devitalized central incisor, would, after a casual examination with a mirror and explorer, do so. When that event happens —and it does happen every day—there are two wrongs committed. The prospective patient wrongs you by placing you upon the same plane with the tradesman; you wrong him by offering to deliver something to him—presumably first-class—when you do not know what the article is going to cost you ready to deliver.

---

*Read before the Minneapolis Dental Society, 1910.

An inspection of the average dentist's ledger will show a surprising monotony of "set figured fees." Turn page after page and see one gold crown after another marked the same price, and then ask yourself how close you can estimate the time to crown a tooth you have never seen.

Recall in your own mind how you prepared the root, fitted and cemented a Logan for Mrs. B in one, two or perhaps three short sittings and how satisfied you felt when you placed opposite her name on your books a figure you knew was commensurate with the benefit given. Then remember the case of Mrs. C, after perhaps six one-hour sittings (I'm not exaggerating, we've all had them), you finally cemented to place a Logan, which you knew was not perfect, and, if you cared to confess, you didn't care very much if it wasn't. That Mrs. C came from five to fifteen minutes late each appointment; she began fault finding and complaining the minute she was in the chair and continued the same every time the fingers of your left hand left her lips; "her last sitting had given her a severe headache, and couldn't you get through with her a little earlier today?" A neighbor had told her she thought that "pivot tooth" was lots darker than her other teeth, and "couldn't you lighten it just a little bit before you put it in to stay?" What's the use of adding more details,—we've all been there and we've all been mighty glad when her last appointment was finished.

Right here comes the trouble—Mrs. B is a friend of Mrs. C may even have been the cause of her coming to you; so, when you get out your little book you put down that same little legend you wrote on Mrs. B's page, "One Logan Crown $00." You are afraid to charge what the work was worth in the latter case for fear you will lose a good-paying, but mighty hard patient.

Nearly all of you have a certain definite price for a pair of full vulcanite plates. Can you make all these plates in the same length of time? If not, then why don't your books show it? Educate your patients, charge for your time and stop selling gold, alloy and rubber.

A dentist friend of mine said the other day that he was using lots of Acolite Inlays in molars and getting good prices, too. Asked what these prices were he said three dollars for simple cavities and four dollars where he had to destroy the pulp or treat and fill the roots. Think of it, gentlemen, this man charged one round dollar to destroy a pulp, clean and fill roots or treat an abscess with its subsequent root cleaning and filling; and three dollars for the filling itself. His proportions are wrong and should be reversed. A man with prices like that would build a $10,000 house on a 50 cent sand bank. I make no comment on my friend's price of three dollars and four dollars—you can make your own figures—it is the idea of having any set price, which of necessity cheapens the whole transaction.

If you had a child ill with scarlet fever and sent for a physician, would you stop him at the door and demand to know what he was going to charge you to restore that child to health? If that is absurd, will you tell me the difference in principle when a patient comes into your office and demands to know what you will charge to fill his tooth?

The use of the word "fee" carries with it an assumption of the use of brains, so educate your patients in the use (and payment) of "fees" not "prices." Drop a little teaching of the brainy part of dentistry into your patients' ears as you work and leave out a little of the mechanical. Mention the fact, if occasion permits, that dentists today are selling what they know—not what they buy in the supply houses, and above all give your patients to understand that it is just as impossible for the dentist to say with certainty the amount of time a piece of work will require as it is to say how long that same piece of work will endure.

I've tried to give you a few arguments against "Set Prices"—I have yet to hear of an argument for them—applied, of course, to completed work.

HOW TO CREATE A DEMAND FOR HIGH CLASS DENTISTRY

By J. M. Thompson, D. D. S., Detroit, Mich.

IN writing upon a subject of this kind one comes face to face with a condition which baffles description. The average patient if asked, "Who is your dentist?" will usually extol the man who has to their notion given them perfect satisfaction for years and to them he is the highest good in the dental world.

On the other hand, the person asking the question may or may not be competent to judge from general appearances whether the one doing the talking for Dr. Blank really knows good from bad dental work.

For example let us imagine that the one of whom the question was asked displays, while talking, a substantial but unsightly bridge constructed with two gold shell cuspid crowns supporting four heavily tipped incisors. The owner of the bridge may be able to eat green corn off the cob, etc., and do many things that the natural teeth would do, but to the one who is listening to the enthusiastic description of the ability of Dr. Blank, a very clear idea of his good or bad ideas of art and skill are stamped upon the mind regardless of what is said.

The hue and cry heard on every hand when the question of fees for certain classes of work is being discussed by members of the profession who meet at conventions from different sections of the country is, "Oh, that's all right for you fellows who are in a good town, but we can't do it in ours." They seem to be oblivious of the fact that people are the same in every town or city and that in their own community which they deride, there are persons looking for a dentist who has high ideals and the ability to carry them out, and who will gladly pay such an one a price commensurable with the services rendered.

High class dental work and large fees do not always go hand in hand, as many times the man who is a good fellow socially may by his personal charms draw to himself a large following from which he may be able to exact large fees, while his work may fall far below that produced by a less popular neighbor.

Dental work cannot and must not be judged by the price it brings, and the dentist who sees only the fee, is not the man who can be expected to command lasting respect.

Each person in the dental profession has a mission to perform in the educating of those who seek his services. To be properly qualified, first of all, he must have high ideals and be willing to sacrifice, if necessary, many comforts in his early career so that ultimately his real merit will give him a place in the world. Even though he may feel at times that his efforts will never be rewarded he will come at last to know that the law of compensation is real.

A man of high ideals will not be contented to go along and make stereotyped rubber plates such as are shown by the man who has a show case full of them outside his door, neither will he try to see how quickly he can set a Logan crown and get five dollars for it.

If his ideals are right he will see in the mouth of each patient a group of individuals who need his personal care and he will not fail to impress upon the mind of the patient first of all the practical value and the important part they play in preserving the strength and comeliness of the face. He will carefully instruct them in the personal care of the teeth and the necessity for preventive as well as restorative dentistry.

It is the duty of every dentist to take his patient into his confidence and explain, if necessary, just what is being done and what results may be expected upon the completion of the work. It is not advisable at all times to volunteer too much information, but if questions are asked all information pertaining to the question should be given cheerfully. This alone begets a feeling of confidence in the mind of the patient which no other method is liable to produce.

These are days of progress and the average patient is no longer a stranger to the work of oral prophylaxis and it is along this line that a great deal of instruction may be given. We may teach our patients that high grade dentistry calls for methods which have as their ultimate aim results which in no way rest upon or irritate soft tissues and that the avoidance of conspicuous gold bands or a needless display of gold in any position is not looked upon as good practice.

Another factor in creating demand for high class dentistry is found in the position the dentist places himself in among his fellow practitioners. More harm is done by men who through narrowness of mind can see only their own virtues and enlarge upon the faults that they see in others. The progressive man studies his work in all its branches, so that he may be in a position to give intelligent advice to his patrons.

Men doing special lines of work are becoming numerous and they must necessarily know more about their particular branch to be successful, and the mere fact that there is much in each specialty that the man doing general work does not know calls for a more liberal knowledge all around.

Time and space do not permit going into further discussion of the many phases of this subject, but in conclusion the whole matter may be condensed into three parts, viz., a confidence in one's self based upon a broad educational foundation, the confidence and esteem of the profession at large, and the confidence of the persons with whom we are dealing.

These three qualifications are bound to create a demand for the high-class services he is able to render.

PAYING OF ACCOUNTS.

By Geo. F. Burke, D. D. S., Detroit, Mich.

DURING many centuries the law of England, like that of most other countries, was that a debtor should be imprisoned.

Many of us know, perhaps, several individuals with whom we would like to even matters up by sending them to such a place, but fortunately for the debtor class the laws have become more lenient and they escape such punishment, though in some cases this penalty is none too severe.

In the average dental practice there are three classes of patients, viz., these who pay accounts promptly, those who are slow in paying and finally those who refuse to pay. It is with the latter two classes that we have difficulty and it is these that we shall consider, together with ourselves, in this paper.

Progressive and up-to-date merchants, as a class, do not deliver goods without first ascertaining some particulars in regard to their customer's credit, but it seems that many dentists are perfectly willing to undertake frequently very extensive operations for patients without first finding out the credit of these patients, which is a very great mistake.

Reliable reports of this kind can frequently be had through progressive grocers in small towns, and in larger cities, through credit companies, concerns whose business it is to find out how individuals pay their landlords, grocers, butchers, druggists, etc. Any prospective patient, who is either slow or refuses to pay his grocer, is very apt to treat his dentist in the same manner.

After a patient has called at your office and you have secured name and address and ascertained patient's credit, ask for payment in advance if patient's record is not good. In case you are refused just let the patient go to those who believe it profitable to perform dental services for that kind of people. In the meantime you will be conserving your nervous energy and will find more time to do some profitable reading.

Most of us know many cases where well-meaning patients meet with misfortune, either through sickness, financial reverses or other causes and are placed in a position where they cannot meet their obligations. These, in a great many instances, are deserving of our sympathy and aid, and credit should be extended to these people even though our hopes of securing payment for our services are very slight.

On the other hand, there is a certain undesirable element in nearly every locality, who do as little work as they possibly can and extend their credit in every direction possible. They have an abnormal appetite for many of the better things in life and pay for things only when they are compelled. They have no conscience and treat the people they owe with utmost indifference. Such people are parasites and frequently rush to the younger men in our profession. It is against this class in particular that dentists should fortify themselves, by ascertaining prospective patient's credit.

There are among dentists altogether too many poor collectors. Many believe they will offend certain patients if collections are followed up eagerly, which is true in some cases, but, with most of us our ability to pay depends upon our ability to collect accounts and a poor collector is very apt to be slow in settling his own accounts. It is infinitely better to establish the reputation of being a good collector.

Statements for professional services should be mailed out on the first day of each month, except where there is an understanding to the contrary. When there is no response, where a bill has been sent out for the second or third time, it is well to write a short and courteous note calling their attention to the oversight, and if there is still no reply good results are frequently had by having the office girl call, and if this method does not bring about a settlement it is just as well to turn it over to a good collection agency or lawyer. Unless the amount involved is considerable it is not well to bring suit, as the expense and trouble of carrying on the suit will amount to more, in many cases, than the total of the bill. Accounts should not be allowed to run for several years; an effort should be made to collect them reasonably early, as the longer they run the greater the chance of losing them entirely.

The minimum of trouble, relative to handling our accounts, is had by exercising due care in regard to extending credit. The failure of many merchants is ascribed to the fact that credit was extended too liberally, and a great many dentists would perhaps be better off if they had not allowed themselves to be imposed upon so much.

There are many dentists who pay their accounts promptly, but with some there is much negligence in this matter. Quite a number never seem to have "a clean slate," which acts very much to their disadvantage. A very much better method would be to borrow sufficient money from a bank to pay their obligations, thereby giving the fact that they are in debt much less publicity. Other things being equal, the man who pays his bills promptly is more apt to receive patronage from people with whom he deals in a business or professional way, than the one who is slow in meeting his obligations.

According to a well-informed dental dealer only about 24 per cent. of the dentists take advantage of discount, and in view of the fact that he can make his money earn him 11 per cent., by depositing $90.00 with his depot, the number of those who take advantage of discount is very small.

When a dentist buys $200.00 worth of dental supplies in a year and does so by depositing $90.00 twice in the year, he makes his investment pay him 22 per cent. Very few of us have such opportunities for investment. Professional men do not make their money go as far as they should.

In mercantile lines the discounts run 2%-10 days, 2%-30 days, etc., and though these are small still quite a number pay dividends only from funds made from taking these discounts.

In a town not far from Detroit there lives a very well-educated and talented dentist, but in everything pertaining to business he seems to have anything but a clear understanding. He has remarked that he never sends out a bill except when requested and it is needless to say that he has to be forced to settle his own accounts. The substantial business men in his locality do not take him seriously; they call him "Doc." This man would occupy an entirely different place in the minds of his fellow-townsmen if his conduct relative to business transactions was more in keeping with proper business standards.

Finally, success in dental practice, as in other callings, does not come easily; it comes to most of us only after much work, study and perseverance, but it helps greatly to have it said of us that we are "good pay." We should bear in mind the old axiom that "short credit makes long friends."

HOW A DENTIST SHOULD INVEST MONEY.

By S. D. Ruggles, D. D. S., Portsmouth, Ohio.

THAT Providence has endowed some with the ability to accumulate and others to spend is well known to all, and has been a subject for thought and reflection since the beginning of time.

The ability to spend sees its highest development in the American, and is the natural sequence of a land of plenty; yet on the contrary it has produced the world's richest men.

While we are all endowed differently along this line, there seems to have crept into certain professions to a superlative degree, the idea that money readily acquired should be used freely and with no anxiety about the morrow. The Saviour's teachings were uttered under very different conditions than those existing in the twentieth century and, therefore, cannot be taken literally. In this day a man is rated both socially and financially by his standing with the bank, therefore it behooves one to cultivate the polite art of economy, for it of itself is a great revenue.

After all, it is the want of money which keeps us in our offices eight or ten hours each day, and the most lamentable fact of it all is the delusion that we're well paid.

Upon inquiry into the income of the average dentist from men long associated with dentists in general, it surprised me to learn that the majority would not collect over $2,000 per year, and in many cases nearer $1,000. The supply houses usually estimate the office expense at about 20% of the work done. This, in the offices running between three and six thousand, is a rather low estimate. These figures are simply given in order to show the small amount available with many practitioners for investment and the great necessity for its careful placement.

Before enumerating the various methods advocated for conserving this residue, it should be berne in mind that while it is well for men to have outside interests, the primary source of income (dentistry) should not be jeopardized.

The first and most important part played in the finances of professional and business men is adequate life insurance to cover any obligation which may mature in case of death. There is no better way of creating an immediate estate. Since the recent airing of insurance companies' affairs, the public at large has become better acquainted with the real significance of life insurance.

The present trend in the purchase of insurance is to buy the greatest amount of protection for the least money. What is termed straight life,--one payable throughout life at a definite rate can be bought for less money, thus enabling a greater return in case of death than on the endowment plan. It is purely a policy for protection and has no investment features. Anyone whose income is small should buy as much of this insurance as can be carried without becoming a burden. Old line companies charge lowest rate compatible with safety.

Next in order should be placed the twenty payment life policy. While the rate is higher there are certain investment features which appeal to one in the shape of returns at the expiration of policy. This becomes a source of income after maturity and can at the option of the holder be paid in a lump sum and invested or received in annual installments.

Life insurance is not taxable and has the great advantage of not depreciating in case it becomes necessary to change one's place of residence. As an investment the returns on insurance of this sort are from two and a half to four per cent.

The slip of an instrument in the hand of a dentist is sufficient warning that an accident insurance policy would furnish bread and butter during a period of inability.

Many good business men who are enlarging or reaching out for new business consider it good practice to protect themselves by taking out insurance sufficient to protect the firm in case of the death of one of its members, otherwise the life of the business is endangered.

These principles hold good for professional men also. Next to life insurance it is a man's duty to own his own home. This does not apply to merchants or manufacturers, for it is usually to their advantage to keep their money in their business until a surplus has been established. But professional men have no such use for their surplus and it is certainly the ambition of every man to be master of his own latch string.

This especially holds good for men practicing in small cities and towns, as property values are not so high that a man of average ability cannot acquire it. After a site is paid for, any man with a family is justified in going in debt for a home. The convenience of the modern building and loan enables one to apply his rent toward its payment. From 30 to 60 per cent. of the rent in this case will be used toward reducing the principal. This depends upon the kind of loan selected. The horror of debt often prevents men from taking this step, but this is legitimate debt and is laudable. I believe the majority of homes purchased in this country today are paid for in this manner. If the necessary precaution has been taken in the shape of life insurance, there should be no hesitancy whatever in assuming a reasonable loan in the purchase of a home.

The above in reference to the purchase of a home may not be applicable to one in a large city where property values are exorbitant, and to him I should place, first, life insurance and then the investment of his surplus in non-taxable bonds. In most states municipal bonds are exempt from taxes and can be bought from any reliable bond house or banker so as to yield 3½ or 4 per cent. In this state money is taxed on the average at 3%, therefore the investment will equal 6½ or 7 per cent. These bonds are accepted by the United States government from National Banks in times of panic to secure their issue of bank notes, and are, therefore, as safe as any investment can be made. They also have the advantage over the U. S. bond of yielding a larger income.

The basis of all investments should be safety of principal rather than interest paid. No investment is sound where the safety of the principal is jeopardized for rate of income. You need have no fear of panics with such collateral, as any banker will loan within 4 per cent. of the face value of such a bond, and they are always negotiable.

A very popular form of investment with some is the preferred stock of industrial corporations. Where a corporation is known to be prosperous and paying dividends, stock of this sort can be bought with comparative safety, yielding six per cent. and is non-taxable. One point should be borne in mind, however, in the purchase of this stock. You should be acquainted with the management of the firm and know to a certainty that every share of preferred stock is secured by at least two shares of common stock. This, together with the surplus of the company, makes loss very remote, indeed.

A favorite form of investment is real estate. This calls for a peculiar form of judgment not possessed by every one and can be recommended only to those who have some business ability.

The writer has found that unimproved property is usually to be avoided unless bought in a growing section of the town. It should be turned quickly, for there is no income and the taxes and street improvements are apt to become burdensome. In general it would seem best to invest in improved property which pays its own way. In case of sickness or disability this need occasion no worry. Business property in some instances is desirable, but has the one disadvantage, the shifting of business centers, which causes large and sudden depreciation in values. Residence property renting at a medium price will in the long run be about as remunerative as any, especially in towns of small size. This can be managed after office hours and is compatible with one's work.

The question naturally arises, how can one know how to buy? In answer to this, let me say that undesirable property is not cheap at any price. If others do not want it, neither do you, for the demand controls the price of the supply. Property is cheaper in a growing section at an advanced figure than in an undesirable section at a sacrifice.

First of all, invest in a location which promises to be stable or will improve as time goes on. See that it is convenient to schools and churches, for the education of children is one of the most important home questions. Drainage is of utmost importance. I have known houses to be vacant one-half the time on account of defects of this nature. The too-close proximity of a soap factory or some other undesirable business will also have its effect. Adequate fire protection is of paramount importance and low sections of a community where floods occur, should be avoided. One other point and a very essential one to be borne in mind is that of transportation. Time is the most valuable commodity any man has in this century, and it enhances the value of any property to be close to car lines.

Stocks of the great railroads are used very largely by some for investments, but should be left severely alone by the ordinary person not familiar with them. To buy outright a dividend-paying stock listed on the New York exchange is permissable, provided it is purchased when the market is low, but it is pretty generally a good plan to let such matters severely alone. Few men are capable of dealing in stocks to advantage and then only after long experience. The average dentist, unless a friend gives him a tip, and tips are dangerous, seldom possesses the business ability to handle such issues and generally comes out the loser. Under no circumstances buy on a margin. The man who earns money with his fingers can ill afford to risk it in such ventures.

The golden opportunity to get in on the ground floor with every little industrial promoter who sells everything from a novelty to oil and mining ventures should be shunned.

DIPLOMACY AND THE DENTIST, OR THE EMPLOYMENT OF TACT IN THE CONDUCT OF A DENTAL PRACTICE.

By C. M. Wright, D. D. S., Cincinnati, Ohio.

Professor of Physiology and General Pathology, Ohio College of Dental Surgery

THIS topic has been assigned to me by the editor of the DENTAL SUMMARY. Diplomacy, according to my preconceived notion, has more direct associations with politics and governments than with private life and business.

In the management of difficult questions arising among party leaders, and among government officers in dealing with foreign countries, *diplomacy* has always been regarded as a requisite. In fact, it has been molded into a system of rules and precedents for the guidance of ambassadors and political agents. Tact, on the other hand, is a something which exists among all men, and is exhibited between individuals in all the walks of life, as a nice perception—a knack. A man is said to have tact, or to have been tactful when he says or does exactly the right thing at the psychological moment. And I would say that tact, which, like faith, is the substance of things hoped for, and the *evidence* of things not seen, frequently requires the employment of diplomacy, even in the quiet management of a patient in a dental chair. Tact is an actual quality and can be noted in daily life in any or all of the relations of men to one another. In business and professional life, in society; in the humblest as well as in the highest walks of life, tact is a valuable reality. It is displayed in the shop, on the streets, in the pulpit, in the court room, on the bench, at the bedside, in the ballroom, at the banquet, in the schoolroom, in the home—everywhere, where two or more people meet and interchange material things, like shoes and land and iron, or ideas—religious, scientific, political or social. In advice given to young dentists we are very apt to wisely comment upon *tact*. "You must be tactful. You must acquire the '*savoir-faire*.' " The basis of success lies in tact. The man who has tact succeeds. The man who "has no tact," no matter how brilliant his attainments in science, or how great his capacity for acquiring knowledge, or even how distinguished his ability for performing skillful manual feats, is usually a failure. "Failed for want of tact," is not an uncommon saying. It must be true that *tact* plays a leading role in the affairs of man. Success does depend upon it. The question arises naturally in our minds: Is this definite thing which brings success a thing that every man can have? Is it a form of culture; or, is it an undefinable natural quality of mind—a gift possessed by one man and denied to another? Can it be studied by the psychologist or by the physiologist? Is tact tangible enough to be acquired through the methods of a school or university? Can we "teach tact by correspondence?"

The old story of the recent recruit to the class known as the *neuveau riche*, whose daughter was rejected at a fashionable school because she lacked capacity. "Capacity! Capacity!" cried the indignant father. "I can buy capacity for my daughter," might be applied to tact. Can we buy or beg or steal tact? Or, again, if it is a quality residing in some brains and not in others, where does the brain anatomist locate it in the grey matter? If the exhibition of the *function* is plainly evident, where is the ganglion of nervous tissue within the cranium from whence the impulses originate? As a keen mental perception seems to be the most prominent quality in tact, perhaps a thorough study of the rules and precepts employed by diplomatists might help, and a thoughtful attention given to the incidents of daily associations with men, women and children with this one object in view, might materially assist one in acquiring this keen perception. The school for this training is the world about us, and is very wide in its scope. A lost man in a camp of savages can by tact alone save his scalp. A tactful man in the midst of bitter enemies can turn fierce enmity into friendship. It is a weapon of power, not only in strenuous emergencies but in all the relations of life, no matter how simple the environment. It can be displayed by an expression of the eyes, by a smile on the lips, by a word from the mouth and these facial expressions and words must be measured to fit exactly the situation and the occasion.

The physician, supported as he always is by a background of mystery, has a splendid opportunity for the use of tact and a special need for it in his daily work. I am tempted to say that a physician needs tact in his mental equipment, rather than science for the successful management of patients on their road to health. We often feel that the doctor himself, by his personality, his attitude toward the patient, his smile, his frown, the shake of his head and his manner, has a more potent influence on disease than have his prescriptions. The successful physician's work is not always based upon his diagnosis, but upon his tact. This is true in the practice of dentistry as far as personality and tact are involved, although the dentist deals largely in mechanical therapeutics. Visual results are expected and failures are more readily detected by the patient.

There are schools of diplomacy for would-be diplomatists.

The Jesuits, I have been told, have systematized rules and precepts for the conduct of their brethren in the many difficult situations in life. They teach what may be called a "wise dissimulation," and claim that "effective dissimulation is never immoderate." In George Eliot's *Romola*, Pucci says: "To manage men one ought to have a sharp mind *in a velvet sheath.*"

Each of us can recall instances of the display of tact in our own or in the practice of some brother dentist, also cases where the want of tact has worked more or less injury to the dentist in his struggle for success. As an illustration of the lack of this valuable asset in a certain case, let me relate an instance which occurred in my own practice. Many years ago, while practicing abroad, at one time my office girl made an appointment by mail with a Countess de Something whom I had never seen. She lived in a neighboring city some three hours away. When she came in I found her to be young, pretty, graceful and exceedingly attractive. This would naturally please an ordinary dentist and tend to put him on his best behavior. After an examination of her mouth and teeth I explained to her what I deemed necessary for me to do at that time. I need not say here that my explanation was in a foreign language, the mastery of which I had never gained. She understood (I think) and displayed a sweet amiability, for she neither laughed at my blunders nor showed the slightest resentment for the crude and barbarous murder of her own language on my part. Everything looked lovely. I arranged the small mouth napkins and took up a Froid separating file: at this, peace fled and war came forth. Under considerable excitement the pretty creature cried out, "No! No! dot vill I not have; dot vill I not have." This was an emergency nicely presented for the exhibition of tact on my part. Many years before I had seen Dr. Jonathan Taft under nearly identical circumstances, smile, lay down the file, take up a chisel, and proceed pleasantly with the operation. Did I show tact? No. Instead of following the excellent example of Dr. Taft, which had left such a favorable impression on my mind, I tossed the file upon the table, whirled the chair around on its pivot and said, "Madame la Countess, the seance is over." The lady was very much surprised. She had, no doubt, been accustomed to having her own way with the dentist.

"Will you really dismiss me in this manner?"

"Yes, madame, the sitting is finished." There was nothing else for her to do but to go. Eyeing me with a furtive but suspiciously curious expression on her face, she gathered her fan and other belongings and left.

About six weeks later a letter came to me from a lady whom I had known as a patient—a valued patient—who, by the way, was a relative of the Countess—asking if I would consent to make another appointment for the same little dainty Countess. Of course the appointment was made.

When the little lady was seated, the same obstinate devil that had possessed me before entered, and instead of conciliation and nice politeness, I mulishly took up the separating file and proceeded to operate in my own way. The humor of the affair touched the sense of the Countess and she broke out into a merry peal of laughter. I never felt so ashamed and little and mean in my life before. She had conquered.

I saw her numbers of times afterwards, but she never again saw a separating file in my hand. We became very good friends and often laughed about the ridiculous contest. I was her most humble slave and I never take up a separating file to this day without recalling that long past incident, reflecting upon the tact shown by the Countess and the want of tact displayed by the dentist.

Mighty of heart, mighty of mind—magnanimous; to be this is, indeed, to be great in life; to become this increasingly is, indeed, to advance in life.—Ruskin.

PERSONAL REQUISITES IN PRACTICE BUILDING.

By B. Holly Smith, M. D., D. D. S., Baltimore, Md.

Prof. Operative Dentistry and Oral Surgery in Baltimore College of Dental Surgery

THE attainment of any desired object must find, in him who seeks it, a certain amount of force, a strength of character that is not born in a moment, not the result of one high resolve, but the outcome of a certain kind of thinking, living and training. Many bring to the accomplishment of successful deeds inherent qualities, natural endowments, which are contributory factors in their victory, and happy is the man whose selection of a vocation has been made with a view to taking advantage of these; but history proves that many men, conspicuously unfitted for their selected calling, have achieved eminent success. With these thoughts in view, let us speculate upon the personal qualities inherent and attained which make for success in practice building.

We must contend first that, this, like every other game, must be played according to the rules; that the diamond bedecked shirt front and the sixty horse-power automobile of Elbert Hubbard's hero, the "Advertising Dentist," brings to us no thought save of outlawry, and loss of self-respect and the respect of one's fellows.—Ishmael should be his name. That kind of practice building costs too much and leaves its builder too poor in all that goes to make life worth living, to be considered in this article. We prefer to consider the subject from a purely professional standpoint. The rewards of professional service are not all monetary, and success means more than the accumulation of wealth. It means a conspicuous place in the respect and esteem of your community; it means an impression of helpfulness upon your profession; it means a growth in your own self-respect, a knowledge of increasing power and usefulness, a contented mind and a broad charity to your fellow. Practice building along lines that will bring us into the possession of these blessings is a consummation devoutly to be wished. No man can succeed in this without a certain amount of capital, and this, thank God, is in the reach of not the rich or the few only, but of any man who has "loins to gird and is willing to gird them."

To begin with then your practice builder must be a gentleman, and when we say that we don't want you to accept the interpretation of the term which the valet did, when, with a growing familiarity with his master's peccadilloes and financial difficulties, he was led to exclaim, "Thank God I am no gentleman!" but rather that of Tennyson, "And thus he bore without abuse, the grand old name of Gentleman," a gentleman with a high sense of honor, with a self-respect born of right living and clean thinking, one who can feel that, "His strength is as the strength of ten because his heart is pure," a manly man who can hold his head up in any company, with a chivalric deference for women and a great love and tolerance for children.

Of course, it goes without saying that such a man will bring to the practice of his profession an adequate preparation. Ignorance or trickery have no part in his makeup, and today when the journals are full of the splendid achievements of practitioners, when the dental societies everywhere are conducting post-graduate courses at their clinics, there is every chance for the earnest and ambitious man to augment his proficiency.

The reputation which the skilful operator gets for his successful operations goes a long way towards making his success, but our practice builder must in addition be well groomed, he must love his bath, he must know that he is personally agreeable. The reproach that "dentists are dirty" must find in him and his acts a living contradiction. The slouch and the sloven, when possesed of certain personal qualities, may be popular in some walks of life, but people of influence, position and refinement balk at dirt, and few, indeed, will seek such close personal contact as is necessary between dental practitioner and patient when the former is careless and unclean in person. The breath of our builder should be free from foetor. His eye should be bright and willing to look deep and confidently into that of his patient, with no lascivious droop to the lid, and no vulgar stare for every peek-a-boo waist that happens to find its way to his office.

An amiable friendliness in manner is wonderfully attractive, it inspires confidence and puts patients at ease. No labored trite conversation about the weather ever brought people close together, but some word of kindness or evidence of real interest inspires confidence, and with that patients travel from great distances past the offices of men perhaps more capable, to receive attention from the one who has inspired it and can keep it. I have always thought that the dentist was wonderfully resourceful, and our builder will show this in the management of his practice. He will not expect to treat every one of his patients alike. A certain amount of dignity and reserve is invited by one, while cordial friendliness is the just due of another. Whatever diplomatic turn the treatment of a patient may take, there will be no faltering in one thing, the utmost politeness and candor must prevail.

Now, let me say that this is absolutely impossible unless the dentist feels in his heart a love of his work and a real interest in the one he is to benefit. He may play at this, but he can't really succeed in it unless his interest is genuine.

There is unquestionably a certain agreeable impression that grows out of the buoyant radiance of health. Wholesomeness is attractive. Those who seek dental services need help and they more confidently look for it in the strong. They feel a sense of comfort and confidence in the presence of the physically and mentally normal. Degeneracy and disease repel. The practice of dentistry is taxing and depleting. Worn out physically the dentist is not capable of his best work or his most agreeable attention. He has not the patience or will power to successfully reassure a nervous, irritable subject. A certain mastery so essential to success is lost. Poise is gone, and eccentricity jars upon his tired nerves and provokes a sense of discord. Our builder must remember, therefore, that he is in training and must not break it. The hours from eight to three o'clock or nine to four, depending upon the season, should find him in his office. He should have some outdoors every day, and, if possible, sleep out every night; without red blood he is not at his best. Late hours and dissipation are poor preparation for a hard day in the office and there is much opportunity for the loss of an important patient or possibly family after such experiences.

Fair treatment of his fellow practitioner is not only ethically right, but makes the best impression on right-minded people. Hence our builder will make no criticism of work done by other dentists. In fact, and finally, our practice builder must be in every sense of the word a Man, such a man as Kipling speaks of in his latest poem:

> ''If you can keep your head when all about you
> Are losing theirs and blaming it on you;
> If you can trust yourself when all men doubt you,
> But make allowance for their doubting too.
>
> ''If you can wait and not be tired by waiting,
> Or being lied about don't deal in lies,
> Or being hated, don't give way to hating
> And yet don't look too good, nor talk too wise.
>
> ''If you can force your heart and nerve and sinew
> To serve your turn long after they are gone,
> And so hold on when there is nothing in you
> Except the Will which says to them: 'Hold on!'
>
> ''If you can fill the unforgiving minute
> With sixty seconds' worth of distance run,
> Yours is the Earth and everything that's in it,
> And—what is more you'll be a Man, my son!''

HOW TO MAINTAIN GOOD FEES.

By Henry Barnes, M. D., Cleveland, O.

AS I view this subject it seems to me that the question may be answered very briefly and yet be very comprehensive in its scope.

Realizing fully the necessity of ''The Business Side'' so far as the business side is concerned, i. e., looking after the business end of our work, I still maintain that with this there is one absolutely necessary requisite to success and that is: To earn the fees by giving our very best service first, last and all the time.

At every moment of our lives we should be trying to find out not in what we differ from other people, but in what we agree with them.—*Ruskin.*

THE BUSINESS SIDE OF DENTISTRY

By J. R. Bell, D. D. S., Cleveland, Ohio

IN GIVING some ideas on the business side of dentistry I do so to satisfy the Editor of THE DENTAL SUMMARY, and not to gratify any desire on my part, and what I say will be addressed particularly to the young men in the profession, for the older practitioners are already conversant with these and many other business methods.

Love for a specialty is an essential feature. I do not believe men succeed in dentistry, or in any specialty, who have not a real genuine love for it. I think it must be natural, and cannot be acquired.

A young man ought to be able to measure his ability to succeed in dentistry by the end of the first, or at least the second year. If then he has any doubt about his aptness or fitness, he had better withdraw, and apply himself to that vocation for which he thinks he is better qualified.

Physical endurance and a good constitution should be a great factor, and should be well considered before deciding upon dentistry as a profession. In order to succeed in dentistry, one must lead a steady, industrious life, as the constant nervous strain is often more than even a robust man can endure. A man must also possess artistic skill and ingenuity.

I presume you will wonder how these ideas apply to the business side of dentistry. I will answer this by saying that it is the successful business side of dentistry with which I am dealing; and I know the above requirements are necessary in order to make a showing on the right side of the journal.

The office and location should be in a city, and on a street, with a consideration of permanency. You are then classed as a man among men. Lincoln once said, "If a man will keep his office, his office will keep him," and this is as true today as when it was uttered. I believe the office, like the dress, should be neat, but not gaudy; pretense and glare no longer win and hold the desirable patrons of the dentist.

There is nothing a young man can do more effectually to establish his reputation than to establish his character and credit. While credit is the professional man's capital, he can make money, and should do so as well as the merchant or manufacturer, by purchasing material and supplies at a discount. Ten per cent saved, is money earned, and it is as good for you as the other fellow. In gross lots there is often a saving of 25% and up, on many of our supplies.

In purchasing an article either for cash, or on the monthly payment plan, a receipt, or voucher, is necessary. A receipt should remain upon the desk only until filed in a yearly office expense book; it should then be placed in an alphabetical yearly file. The vouchers should be placed upon a spindle and at the end of the month they should be checked up, to compare with items charged. When the bill is paid and receipted, the vouchers should be pinned to it, then these two should be filed away for safe-keeping.

All running accounts and bills should be paid by individual check, the stub of which should be dated, numbered and filled in with article or material purchased. This is a safe, clean, business-like system, saves time in making change, and removes all question of dispute. Check vouchers should be gotten from the bank at the end of each month, and should be tallied up with check book stubs, then filed in the bank's envelope for safe keeping.

A yearly appointment book, in which is entered the name, address and phone number of each patient, should be strictly kept. It is generally a good custom for the operator to plan his own appointments or at least be consulted by the assistant before she makes them. The time required upon each case can usually be best planned by the operator himself. While our operating hours should be first considered, the patient's time should be thought of also. New cases usually speak of the person who referred them to you, if not, it is good business to enquire after reference.

Probably no two men conduct their practice along the same lines. Therefore I do not hope to outline a business system to be accepted by all.

When a minor, or any one, comes to us for services, "either much or little," it is proper that we ascertain to whom services shall be charged, find out later also as to that person's financial standing and credit, then in a note to our new prospective debtor, state that his son, daughter, or niece, has been to us, and ask if we shall do his, or her work according to our best judgment. I am only picturing an occasional case, the above is a common custom in stores, when goods are charged, and it is well to teach our patrons that our services are equal to merchandise.

It requires our best judgment to fit in one case after another and not have them lapse, crowding out our regular lunch, and dinner hour. We are servants for the people and of the people, but should not be slaves and our own destroyers. Our patients and our own feelings should be consulted in all operations. As appointment by phone is the prevailing custom, much time is saved from answering personal calls at the office and in avoiding superfluous conversation.

It is well to remember that time is money and that a dentist's earning power is within himself, not in his employees. We are practicing in a period of wonderful time-saving advantages and if we are idle in our office it is largely due to mismanagement.

We should be able at all times to fill in broken appointments, and extra time, by calling people on our waiting list. Brevity in outgoing, or incoming phone messages should be the distinct rule. In receiving a phone call your own name and not the proverbial "hello," should be given, as example "Dr. Jones' office." This opens the gate for the question, by the person at the other end of the line. This is a small matter, but our lives are filled with small things, which in the aggregate make larger ones, as for instance one hour lost every day for twelve years, amounts to the loss of one whole year.

The name, address and phone number should be taken when receiving a phone call.

In my experience it has proven unsatisfactory to promise to make operations for an exact fee, for the reason that the unexpected condition is apt to arise. It is better business to give an approximate estimate and make yourself safe. This memorandum should be recorded by a trained assistant; by this means the question of exact fee is beyond dispute.

All letters of importance written or received should be filed in an alphabetical yearly file.

The Guilford or any card system with "good diagrams" is the best way of keeping record of fees and cases. The fee for operations is in accordance with individual customs. The character of every operation should be scrupulously recorded, for future reference if necessary. It is gratifying both to ourselves and patrons to be able to turn to our records, note their age, etc. In addition to the card system there should be a yearly day book, in which every item charged on the "card system," should be kept. This insures a simple double entry charge. By this each month's debit and credit, can be easily ascertained and quickly found, and comparisons drawn. At the close of the year the amount of work and receipts can be totaled.

Bills should be made out upon the completion of every case. The customary bill has upon it the date, the person's name for whom the work has been done, and the one to whom it is charged, "In care of:" then the total amount following the words "For services rendered to date $——.

The name and address of the person to whom the bill is charged should then be written upon the opposite side of this bill. It should then be recorded in a book styled "Bill Book." The year, month, and day of the month, the two names, the addresses should be entered as they appear on the bill, and the amount in the charge column. When this bill is sent on the 1st of the following month, as all bills should be, the business end of the whole transaction is then, "get-at-able." When this bill is paid simply credit the amount in the credit column, on the day book, and upon the card, with the date on the two latter. If only a part of the bill is paid, credit it on the card, the day book, and change the amount in the bill book to correspond.

Bills should be sent on the 1st of the month following the completion of a case; when operations are fresh in the mind of the individual, dates are too, and besides, a bill rendered after the work is completed, commands more respect, both for you, the bill, and the operations themselves. Material as well as physical things receive more attention, after the person rendering them is remunerated. Exceptions to rendering a bill as suggested above might be made where two or more members of a family are receiving service at the same time. This is a matter, however, to be left to the discretion of the dentist himself. Most hospitals present bills at the end of each week for room, board, nurse, use of surgery, etc. Physicians' and surgeons' bills are sent soon after services are rendered. Foolish pride, and careless negligence do not win patronage, nor increase your bank account. Usually the first come, first served, with bills as with other things. New and fresh things are appreciated, but soon forgotten or displaced by something else.

The handling of some accounts requires as much tact and skill as the operations themselves. Every dentist should establish his reputation as a collector as well as an operator. No man can do business on the friendship basis, nor on an empty stomach. We all feel better when the balance is on the right side of the ledger. Just as Mrs. Micawber of David Copperfield said, "If I have 20 lbs. and spend 20 lbs. I feel troubled, but if I have 20 ibs. and only spend 19, I feel happy."

After your bill is a few months old, whether in your pigeon hole, or in the other fellow's, it is pretty nearly ready to be consigned to the waste basket. It only wants another month or so, to make it junk, in the mind of your debtor. A bill like a newspaper depreciates with age. It may be necessary to send a bill a second or third time, in as many months, and if there is no response, a polite note, requesting a reason for the delay, should be sent. Then if this brings no answer phone if possible: failing in this you conclude one of several things. Either your new patient has moved, is very ill, is honest, responsible and wants more time, or is the reverse. The situation is up to you to find out. If your bill is of sufficient size, "go after it strong." Be governed altogether by circumstances. If it is a loss, profit by it and do not let it happen again. Remember that you were an easy mark. Before placing an account in the hands of a collector, write your debtor to that effect Give him ten days to call. Use every means before turning the account over for collection. Never sue unless your debtor is a free holder or is employed on a salary. You throw good money after bad. If you go to law, you are sure to lose that person and his influence. The use of a statutory notice to debtor, as per appended slip proves very effectual with many cases.

STATUTORY NOTICE TO DEBTOR

For 10% of Debtor's Personal Earnings.

Cleveland, O., October 1, 1910.

Mr. and Mrs. E. H. Jones, Dr.

To Dr. John B. Smith, Cr.

For necessaries, to-wit: For Dental services for Miss Julia Jones.

The undersigned herewith demands the excess over and above 90 per centum of your personal earnings for the month ending October 31, 1910, or in lieu thereof an accepted order on the L. S. & M. S. R. R., for said amount forty-two (42) dollars.

If the above demand is not complied with forthwith the undersigned will proceed according to law to collect the same.

Respectfully yours,

Dr. John B. Smith.

1000000 Euclid Ave.

See Section 6501 Revised Statutes of Ohio, as amended April 16, 1900.

In case of no response after time has lapsed on the statutory notice, you may conclude that you will not have your debtor's friendship or influence for good, so you might as well get your money anyway. And now you must resort to attachment or garnishee proceedings through the Justice Court. In this, interest and court costs are added to your debtor's bill. I repeat, with emphasis, that a dentist can and should manage his affairs so as to keep out of court. Time and money spent, patients lost, seldom warrants our resorting to law. It is best to compromise in most cases.

A yearly office expense book in which all items purchased are recorded from day to day should be kept. Such a book and system is satisfactory to yourself, and may be introduced as evidence if necessary, and too at the end of the year you can find out exactly where you stand.

A check received as payment for anything should be deposited in your bank, so as to get it through the clearing house as early as possible. Carried in your pocket twenty-four hours may result in the loss of it and your bill The bank upon which the check is drawn, or the man who signed it may fail, or you may lose it by theft or fire. It is good business to note the bank upon which the check is drawn, for, in case of loss, notice may be given. Never endorse a check until about to deposit it. Then pin it to your deposit slip to insure safety. Always keep a tab of "universal" checks in your desk, for the man who wants to pay, *but has no check.* "Accommodate him."

Don't cash a check or sight draft. Never identify a man who wants a check cashed at your bank, unless you know that man. Never go on a note as endorser, you should be pledged to your wife not to do this, if you have a wife, if not, *get one.*

A professional man's first investment should be in a home, and this should be in his wife's name, to revert to his heirs, upon her death. Under such an arrangement the home cannot get away from you, in the event of suit against you for malpractice, damage cases, etc. Besides, you can always realize on a home in case you have to. In my opinion, real estate is the safest, most reliable investment a dentist can make. Real estate can and should be purchased so as to yield an income and to enhance in value. Besides it affords a pleasant avocation to most men. It requires care, but with a clear title and insurance it cannot get away, or fail. An endowment life insurance policy should appeal to a man who has a family, but has no home; he can borrow upon it with less trouble than he can on real estate. It is good business for a dentist to carry accident insurance. Some companies offer better inducements than others, with double indemnity clause, etc. First mortgages are considered safe and the least trouble to many small investors.

Dentists, of all men, need recreation and it is found in the numerous avocations open to us. Some are pleasurable, others pleasurable and profitable. The raising of fruit, poultry, bees and stock of all kinds, are a few of the profitable avocations we think of.

I owe the readers of this paper an apology for the lack of condensation and better system, and can only offer as an excuse, the want of more time and innumerable interruptions.

A PATIENT'S IDEA OF LACK OF GIVING A PROPER CONCEPTION OF DENTISTRY BY DENTISTS.*

By H. M. Semans, M. A., D. D. S., Columbus, Ohio

Professor of Operative Dentistry, Dental Department, Starling Ohio, Medical College.

"Oh wad some pow'r the giftie gie us
To see oursels as others see us."

A FRIEND of mine, let's call him Mr. A—, who happens not to be a patient of mine, approached me one day not long ago with the following dissertation: "Doctor, it surely seems to me that your profession is largely given to belittling a calling or work in life that should take high rank in all communities. In many ways I have been aware of this and I can truthfully illustrate it by a very recent experience I had myself. Most of my dental work has been of a very light nature, a casual examination and but few fillings, the latter fifteen to eighteen years ago, at which time my father footed the bills. Last winter I experienced a few twinges in the upper right side of my face, and, noticing no break about the teeth, I foolishly attributed it to facial neuralgia instead of toothache; the fact that I was laboring under a severe cold gave weight to my mistaken diagnosis. Early in March I went south to Cuba for a few weeks, and one very hot day I had another sharp attack of neuralgia, but, as before, in a few hours it passed away; on the boat from Havana to Key West I again suffered, this time with intense pain, and my suspicions were aroused as to its being of tooth origin, although I could not definitely think so; however, upon landing, all pain passed away and I gave no more thought to it. In May, while in the east attending to some very important and nerve-racking business, I experienced, for me, a most unusual condition, in that one of my right upper molars commenced suddenly to get entirely too long in its socket, and sore. Say, but it got good and sore! I didn't dare bite down on it; for two or three days I went about, every minute tied right up in business, with myself a day late about returning home, where interested parties were anxiously awaiting me, so you see I easily neglected myself, putting in a most intense night of suffering in the Pullman, every jolt accentuating the agony. In the morning, while still on the train, I realized that my facial contour on the right upper side was fast assuming the aspect of a full round Baldwin apple. Upon landing at home my one engrossing thought was a dentist, and a dentist quick; neither my dear wife's solicitous questionings, nor my children's faces, nor my clients' urgent business could get from my mind that just at this hour of pain and trouble the biggest and most important personage in my native heath was the dentist; all business had to hold up if it took a week; my family must retire to the background until this most serious dental pathological condition had been conquered; relief I must have. Our family dentist was either out of the city or else could not be reached, so I went to a young man whom I knew to be of good repute, with a number of years' experience back of him. Mind you, now, I went into his office with a high regard for his ability to rescue me from my terrible trouble; I knew he had the skill, the intelligence, the ability to do it. I also thought how lucky we people all are today in that we are living in the time of highly educated men who by their skilful manipulation and their experience can do wonders for us, whereas but a short time past crude forceps in rough hands were all that humanity could avail themselves of. I explained my troubles, not bearing too much upon the agonizing hours I had had, lest he might take me for a baby, yet giving a fair statement of the history of my case, and then with some misgivings I asked whether the tooth could be saved. "Saved!" says he, after a few seconds' examination, "oh yes, I'll clean it out now, put in a treatment; in a few days you return for an appointment, a half hour or so and I'll fix you up in a jiffy; sure this tooth's O. K., the nerve's dead, that's all; got a little abscess up here, that's nothing, get them every day. So you have been down to New York City, you say? Did you like it in Havana last winter? There, come next Monday morning at eleven and I'll fix you up as good as new; guess it's going to rain before night, what?" "Say, old man," thought I to myself, "perhaps it's not so bad after all," this to myself on the street a few minutes after. Well, to cut in to a finish on my experience, the offender was quickly subdued and filled. "What's the bill, doctor?" I asked. He looked at me a few seconds, seemed to be cogitating his mind over something and then said, "Oh, I used amalgam, as the cavity was 'way back; four dollars ought to about cover it." Well, I paid the four dollars and went away wondering whether he really had properly sized up the seriousness of my case, and I don't believe he did. I have since talked with two or three other professional men (not dentists) and I am convinced that many dentists do not size up the seriousness of their patients' conditions; they are prone to make light of tooth disorders, nor can I see why they should, if it has much mechanical aspect like artificial restoration then they talk out big, but when it comes to the really more skilful restoring of diseased parts of teeth and the mouth, the talk handed out to patients is principally about the weather, local politics, the baseball team and so forth, the patient having had so very pleasant a social time of it that time spent and work done is lost sight of and just a moderate bill often looks big. I've been wondering why this particular dentist hesitated a little bit before he said four dollars. Do you suppose he wondered whether I would think five dollars too much? I, who would have gladly paid a five-dollar bill as a mere retainer fee that first day?" "No, Mr. A—," I said, "he wondered whether he dared go over three dollars."

---

*Read before the Columbus Dental Society, Sept. 1910.

SOME OBSTACLES OF COUNTRY PRACTICE.

By H. C. Sexton, D. D. S., Shelbyville, Ind.

SOMEBODY somewhere remarks that he who ruleth his own spirit is greater than he who conquereth a kingdom, or words to that effect. It sounds scriptural, yet I will not affirm that it is. Neither can I affirm from experience that it is true, never having personally, I must confess, either fully ruled myself or conquered the kingdom.

Yet I believe there is this much truth in the remark—the greatest obstacles to success in any undertaking lie in the man instead of in the environment—they are internal instead of external. All success, all failure, all good luck, all bad luck, have their origin within. In other words, once having learned to rule yourself the conquering of the kingdom is easy.

The old Roman slave and philosopher, Epictetus, said: "Difficulties are things that show what men are." And so it might be stated at once and have done with the question that the obstacles of the dentist in the country, like those of his brother in the city, are overcome by the dentist's learning to show the sort of stuff he is made of, by his learning to exert his own will-power, by learning to rule himself.

But after all this would only be begging the question, so leaving generalities for the philosopher let us take it for granted that our own will powers are equal to the complete subjugation of ourselves and proceed at once to the consideration of the external kingdoms we must conquer—in other words, the obstacles to success we meet with in the practice of our chosen profession in the smaller towns.

In the first place I believe that in the country as in the city all problems in practice are more or less connected with the consideration of fees. What in life isn't? And further, I believe that in the matter of fees the country dentist in the last decade has been discriminated against or rather has discriminated against himself, for whatever injustice he suffers lies at his own hands.

Not considering the cheap advertising quacks, the fees of all in city practice have risen in the last dozen years; in the country the same fee bill holds that was known years ago. And this in spite of the fact that prices of all other things have risen radically. The country dentist knows this, but he has not acted upon his knowledge.

It is apparent to the least discerning that the prices of all farm products have advanced. We can all remember the day when a good chicken could be bought for twenty-five cents; now you pay three or four times as much. In the past, corn sold for thirty-five cents; now it is seventy. Wheat rarely drops below a dollar now; it used to sell for a little over half of it. And these are not all; beef is up, pork is up, veal is up, eggs, butter, cheese, vegetables, fruits, everything is up.

Some months ago when a farmer paid me a bill he remarked that he had just sold one of his hogs for $42.

"How much would you have gotten for that ten years ago?" I asked.

"About twenty," he replied with a grin.

And indeed, the farmer can afford to grin, his income in the last decade has almost doubled. A ton of timothy hay used to sell for six or seven dollars, now you pay twelve to fifteen for it. If country dentists could live on hay they might survive even that rise in price, but they cannot and thereby comes the rub. All prices are up—all but dental prices.

In most towns the fee bill of the dentist is just where it was fifteen years ago. What is the result? The result is that the average dentist, although he may have as large or even larger practice than he had a dozen years ago, has less net income. Where in times past he was able to live well and save $500 out of a $2,500 practice, he now finds it diffiuclt to make both ends meet and play even at the close of the year. And larger and smaller practices are affected in proportion. Time was when the dentist charging ten dollars for a rubber plate, could with that sum buy forty chickens, now he can buy from fifteen to twenty.

To counteract this the country dentist must advance his fees. It is fatal blindness to continue the same old prices in spite of all the changes time brings. Dentists in each locality should have an established minimum fee bill and it should be higher in nearly all its items than that of a dozen years ago.

It is not a hard thing to effect such an increase in their incomes if dentists will only stand together. And to do that they have but to realize in its full force one great truth—a truth so great that it is akin to the saying that self-preservation is the first law of nature.

The great truth to which I refer is this: Our interests as dentists lie together. To cling to each other, to uphold each other is wisdom; to quarrel with, to disparage, to underbid our brother dentist is to play the fool.

Dentists should be competitors in this one thing only—that each should try to do the very best work in his community—and that competition should be friendly. Concerning prices and concerning reputations they should be partners—all of them partners; and realize that what hurts one hurts all. United they can stand together and be prosperous; divided, the public is sure to take a fall out of them and despise them into the bargain.

They should take to heart the moral of the old song:

> "There were two cats in Kilkenny
> Who each thought there was one cat too many,
> So they quarreled and they fit
> And they scratched and they bit
> Till 'stead of two cats there weren't any."

Here is the situation as I conceive it: There are a certain number of gold crowns, bridges, inlays, fillings and plates to be made each year in every community. The dentists are going to do this work since the cobblers and blacksmiths cannot. And in payment the community is going to give the dentists anything they ask in reason. If they ask simply enough to afford a hand to mouth living they are not asking in reason. The service is worth more and as educated professional men they are entitled to more; then does it not seem to you they are fools if they do not raise their fees?

My dictionary says a fool is one who acts stupidly. In the light of the facts we have reviewed here the dentist who today has the same fee bill he had a dozen years ago must plead guilty to the charge. The truth of the matter is that with foolish and stupid he is getting off easy. If he considers his own worldly position and considers the necessities of those dependent upon him, the term criminally negligent will seem to fit the case better.

In this raising of fees it is not necessary to get every dentist in a town to conform, although it is better. But there are stubborn men whose chief delight is to refuse to do those things that others ask them to do, and to do these things that others ask them not to do. They would prefer at any time to injure themselves rather than please a competitor. Such men it is best to ignore. When you find it is impossible to pursuade a mule to leave a burning barn, all you can do is just to close the door and offer up a prayer to the fool killer that he may do his work as quickly and painlessly as possible.

The fee bill established should of course be a minimum fee bill; no maximum should be indicated leave that to the individual. In other words, the fee bill should resemble an aerodome which has a solid foundation and a floor without holes, but above the head no roof, nothing but blue sky.

If a patient protests that she can get the work done cheaper elsewhere, say to her: "Madame, there are all kinds of dentists at all kinds of prices, just as there are all kinds of dressmakers at all kinds of prices. I charge what my work is worth the way I do it; other men may do it differently and charge a different price. But remember, the cheapest in any work requiring skill, is always the dearest; and the dearest is in the end always the cheapest."

After such an explanation your patient will not try to jew you down again. An intelligent person nine times in ten, will tell you to go ahead with the work and will be ever afterwards your strong supporter. It takes a desirable patient very little time to grasp the truth of that motto of P. D. Armour's:

"A fool can cut prices, but it takes brains to make a better article."

I once had a farmer as he paid me for some dental work, say: "You made that money mighty quick."

"No," said I. "You have the wrong idea. It took me several years' time and a considerable money outlay preparing to do that work. The time I spent with you is only a small part of it."

"Yes, but at that rate you are getting rich pretty quick, doctor."

"See here, Mr. Brown," I exclaimed, "You think dentists make money quickly. The truth of the matter is that you farmers get rich quicker than any other class on earth. Show me one dentist who by the hard work of years has laid up enough to live on in old age and I'll show you nine hundred niney-nine farmers who have grown rich. I mean just what I say. Point out your man."

Mr. Brown had no more to say.

Another obstacle which the dentist in the smaller towns has to meet to a greater extent than his city brother is lack of appreciation. Dentistry in the last decade has advanced both in skill and in the world's estimation, very remarkably. But this advance is soonest appreciated in the centers of population. In the rural districts dentists to a great proportion of the people are still mere tooth pullers and naught else.

To overcome this ignorance the practitioner should never fail to become a teacher when opportunity occurs. Let the people see that he takes both himself and his profession seriously and a just valuation by themselves will soon follow. Let him never hesitate to point out the sin of the uncleanly mouth. It can be done quietly, strongly, and in a way that carries conviction yet gives no offense.

But after all, your most appreciative patients, if your experience has been the same as mine, are those whom you have charged the most. Thus we hark back to the question of fees. A good stiff fee will cause increased respect for you and increased appreciation of your work. A small fee will make your patient suspicious of your ability and he may at the least excuse go elsewhere to the man, who, in public opinion, is a better dentist simply because he charges more.

The worldly world which represents nine-tenths of the surface contact we have with people in every day affairs, classifies men according to their earning capacity. Other things being equal or appearing equal—in effect the same thing—the man who earns the most is the most respected and honored.

Go into any town and ask who is the best dentist and invariably the one spoken of will be the man who charges the highest fees. The most anyone can say of the man who charges less is that he is just as good as the higher priced one. It never for one instant occurs to them that the cheaper man may be the better one.

Of course, this is sophistry. As a matter of fact the cheaper man may be the better dentist, but as long as he charges poor prices the public will never give him credit for it. Every dentist should recognize this fact, think over it, and act upon it.

Other obstacles there are in dental practice in the small town undoubtedly. One is the lack of inspiration from closer association with other dentists. To counteract this the local society should be formed. A local society with a membership of six is not as helpful as one with a membership of sixty or one hundred sixty, yet it is a help and should not be neglected. Not only is it helpful in the exchange of ideas about different operations, but it is even more helpful in establishing that feeling of good fellowship which prevents misunderstandings and antagonisms. Then once a year every dentist owes it both to himself and to his profession to take several days off in attendance upon his state society. The benefits are so great and the pleasures so keen it would seem unnecessary to urge this course upon anyone. And yet there are these who cannot see it. It is hard for us mortals to understand why God curses some poor devils with blindness, for blindness it certainly is when a man deliberately chooses to remain a stranger, almost an outcast, to the best element in the profession he has chosen for his life's work.

There is one more thought along the dollars and sense line with which I wish to close. Ignorance of it or disregard of it has caused and is causing much misery. There is only one place in which a man can live a happy life and that is inside of his income. No matter what obstacles confront you, the knowledge that you have a growing balance on the right side of the ledger will be to you a reserve power which will often spell the difference between failure and success. To inherit is distinctly weakening; to save is a strengthener; a builder-up of character. Poverty is the only burden in this world that grows heavier when loved ones share it. Think of it in time. Plan to avoid it before it be too late, for in all cases without exception, it is avoidable.

Think of money as did the greatest of all Scotch poets when he wrote:

> "Not for to hide it in a hedge
> Not for a train attendant,
> But for the glorious privilege
> Of being independent."

In 1792, an English physician, Dr. Francis Willis, went to Lisbon to undertake the treatment of the Queen of Portugal on the following terms: Five thousand dollars per month as salary, the expenses of his journey, a table for himself and suite and $100,000 if he were successful.

OBSTACLES OF THE CITY DENTIST AND HOW TO OVERCOME THEM

By H. B. Tileston, D. D. S., Louisville, Ky.
Professor of Operative Dentistry and Dental Pathology, Louisville College of Dentistry

I WOULD not magnify the obstacles to successful city practice. My attitude towards a practice in a large city is that of a protagonist. My pleading, prompted by inclination and experience, is naturally favorable, and I am disposed to minimize rather than to magnify those things which may rightly be accounted to stand in the way of the young beginner who essays to establish himself in a large city.

The obstacles encountered in city practice may not differ materially from those to be met in practice anywhere, and yet there are some that are peculiar to large cities, and of these I wish to speak.

After all they are not numerous and are peculiar in degree more than in fact, their magnitude depending upon the individual, his point of view, temperament, disposition and natural equipment of those things—shall we call them gifts or virtues—which enable one to meet and overcome difficulties.

If the question were asked of a number of successful city dentists who had been in practice twenty years or more, the majority would probably reply that it was not difficult to secure a practice in a large city. They may have forgotten those agonizing first years' experiences when it was a serious question whether they would be able to stick it out or not. And as they speak only for themselves, no account is taken of the hundreds who have made the attempt to get started in the large cities and have quietly disappeared to reappear in some smaller places, or have given up altogether in despair.

There are three major propositions involved in establishing a successful practice anywhere: First, getting a practice started. Second, holding a practice year after year. Third, caring for a practice as it grows larger and larger.

In a city these problems become more intense as life in a metropolis becomes more strenuous.

In contemplating the venture of practice in a city, one is apt to be impressed with the futility of the attempt to attract to himself, an insignificant little atom in the great throng of people, any of that busy, hurrying, self-centered crowd, each intent upon his own affairs and unmindful, apparently, of anyone else. And yet how dependent they are upon each other. Looking from an upper window down upon a crowded street, it is interesting to note the mass of moving humanity weaving in and out, not seeming to notice each other except to avoid collision, everyone going somewhere, but appearing never to stop. If, however, an individual could be singled out and followed it would be observed that he nods pleasantly to a passing acquaintance, stops to shake hands with a friend, turns in to a shop and makes a purchase, returns to the street, hurries on till he finds himself at the entrance to a large office building; he glances at his watch, steps into the elevator and is swiftly carried to an upper floor, where he steps into an office to keep an appointment with his dentist. And thousands of others in that crowded street are on their way to keep appointments with their dentist, their doctor or their lawyer, or a committee meeting or a directory meeting, in one way or another to come in touch with their fellow men. They are not independent of each other but decidedly dependent one upon another, and thus are mutually helpful. For this reason it is always possible for a new beginner to establish a practice in dentistry in a large city.

But how?

The question finds answer as varied as individuals vary in their characters and their natures. Some deem it essential to make the community stop and take notice and to this end they make a great noise with printer's ink and loud signs upon the wall, electric ones that wink in and wink out to attract attention, and a ghastly display of unattached dentistry in a glass case at their door to entice the unwary. Verily, they have their reward. Such methods may succeed for a while, after a manner, but unless the noise is kept up oblivion is sure to follow, for there is nothing substantial beneath a practice obtained in that manner. That is the way not to do it.

Even the best-intentioned young man is apt to feel a sense of hopelessness when, almost if not quite a total stranger, he contemplates opening an office in a large city and modestly offering his services as a dentist to an indifferent mass of busy people, most of whom, he feels assured, are quite content with their favorite dentist.

How can he hope ever to make a beginning in the face of such adverse circumstances? No doubt he will pass many weary, discouraging days and weeks with the rent falling due and a board bill piling up, and will many times feel like giving it up. But if he is made of the right kind of stuff he won't. He can console himself with the assurance that the men he sees about him enjoying lucrative practices, have all passed through the same experiences he is having, and have come out all right. If he is prepared to do what he offers himself to the public to do, and does it with his might, he is certain to win out eventually.

I think it was Emerson who said, "God has given to every man the ability to do easily some one thing that no other man can do." And another wise man has said, "If a man is able to do anything a little better than anybody else can do it, the world will wear a beaten path to his door."

No dentist, however skillful, is able to do everything better than others can, but he will likely excel in one thing, and upon that his reputation and success depend.

If the young beginner can discover for himself what his special gift is and hammer away persistently at it, not to the exclusion of other things he cannot afford to do that, at least not at first, but enough to make it an individual thing and characteristic of himself, not boastfully, nor in a manner to be offensive to his fellow practitioners, he will surely become known and perhaps even famous. It need not be a thing of very great importance, either. I have heard of a famous singer who really had but one perfect note and upon this he had made his fortune. His audiences waited patiently to hear this single pure tone, which was always sure to be displayed with great bravura and then they went wild.

I have known a successful dentist who had a pleasant, winning manner and very little skill as an operator, but who attracted and held to himself a large following. I knew a dentist who had the largest and most exclusive practice in his city, who was wonderfully skillful in the use of non-cohesive foil, and he could do little else, nor did he attempt much of anything but that.

A dentist may be remarkably proficient in many things, but I believe there is always one thing he can do better than he can do anything else, and most likely, better than anybody else can do it. He may not himself know just what that thing is. His associates are apt to know more about what it is than he is. I verily believe in the final analysis that the possession and development, perhaps unconsciously, of this one supreme talent, is responsible for every man's success.

Another requisite to success is stability, especially with reference to location. The shifty fellow, flitting from place to place can never become known anywhere. The truth of the old adage that "a rolling stone gathers no moss" is apparent. As Poor Richard says,

> "I never saw an oft-removed tree,
> Nor yet an oft-removed family
> That throve as well as those that settled be."

The one who succeeds is the one who selects his location and just stays there.

However big the city and however inhospitable it may appear at first to be, perseverance will tell; influences gradually radiate in the shape of satisfied patrons through whom others come, and thus a practice is established. Just as a river gets bigger and broader as it flows onward, because of the tributaries that empty into it, so a practice may grow from year to year because of the currents flowing in from all sides, as one's reputation for faithful and conscientious service becomes more and more widely known.

Another important thing is to be on the spot and attentive to business.

Augustin Dailey is responsible for the following brief but wise prescriptions:

> "A sure way to success-
> Tend to your business.
> A sure way to happiness
> Tend to your own business."

HOLDING A PRACTICE FROM YEAR TO YEAR

This is the second major proposition and it is the crux of the problem of success.

No dentist can expect to hold all the patients who come under his care from time to time. Nor would it be desirable to do so, for there will be some he won't want, and even if he retained all who were worth while, in the course of a few years he would be swamped.

To somebody every dentist is the best dentist in the city. Some patients are so sweetly enthusiastic as to tell him so and then his vanity is flattered. They may be the first to go to somebody else and tell him the same thing. Too fulsome praise is apt to be mere flapdoodle.

But in proportion as one can impress one's patients with the conviction that he is the best dentist in the world, for them at least, without actually saying so one's self, and keep them thinking so, a practice becomes substantial and dependable from year to year.

Some drift away from one cause or another, and others come in to take their places, while underlying it all there is an ever-increasing number of satisfied patients whom one may look upon as actual property and to whom one may refer as his.

CARING FOR A PRACTICE AS IT GROWS LARGER AND LARGER

One of the inevitable results of success in a large city, where the possibility of growth is practically unlimited, is that a practice will increase until it becomes a serious problem how to properly care for it. When a young man elects to practice in a large city it should be a matter for his most serious consideration, whether, if things come his way, he has the constitution, the vital stamina to stand up under the strain that will be put upon him if he meets with the success he naturally hopes for.

Some years ago I met a gentleman who had been practicing dentistry for a number of years, who told me how he used to sit in his office when he first opened it and long for the time when he would have more practice than he could attend to. That time had then come and he was half dead. I haven't seen him nor heard of him for a long time, and I am not quite sure but I think, by this time, he is all dead. Worked to death!

That is the fate of many a good man who has tried conscientiously, but perhaps unwisely, to fulfill all the obligations that come with a large city practice, and to do it himself. Again, Poor Richard says, "If you would have a faithful servant and one that you like, serve yourself." But Dr. Franklin lived in a time quite different from this strenuous twentieth century. Vast concerns are now managed by individuals who have the capacity of getting things done and well done by others. Some dentists have that faculty, but most have not, but still cling to the "do it yourself" idea, and frequently work themselves to a frazzle in the effort.

A large office in which are employed a number of assistants is apt to take on the character of a shop, an idea that is abhorrent to some men with highly developed professional instincts. They aspire, and quite properly, too, from the standpoint of ethical propriety, to have a distinct personality, and to be something more to their patients than merely a dentist.

One goes to a store to make some purchase without a thought of who the proprietor may be or whether he is seen or not. The goods is what is wanted, and if the desired article is not to be had, there is no hesitation about going elsewhere.

But one goes to one's dentist as to a friend and cheerfully accepts an appointment a week or two off rather than go to another. It is this difference between professional and business relationships with patrons that constitutes a practice, and it is what impels men frequently to undertake more than they are physically able to bear.

Even where there are several assistants employed there is a certain class of people who care, and for whom the chief especially cares, who demand the services of the man higher up and who will accept no other. Thus it may happen that in the effort to divide his labors a dentist may only increase his responsibilities and add to his burden. When such a state of affairs is reached, and this is not rare in cities, one must do two things which require some determination and a *quantum magnum* of courage. First, fees should be increased to a point that will have a selective effect upon one's clientele, eliminating some and retaining and even attracting others who are able to pay the higher fees. Even this expedient does not always prevent a city practice from assuming unwieldy proportions, for there are always numbers of people who are able to pay for whatever they consider the best.

The second imperative thing the over busy dentist must do is to limit his hours and to devote a certain definite time to leisure and recreation; an afternoon, or two of them if possible, when he is not to be found in his office, but which he devotes to golf or tennis or horseback riding, or, better than any of these, or in addition to them, driving his automobile over country roads.

Indulgence in periods of recreation and in more extended vacation seasons should not be postponed until a man needs them badly, for then he is in no condition to enjoy them.

When the habit of unremitting labor gets a grip on a man, it is no easy matter for him to persuade himself that he can afford to be away from his office when there is anything there to be done. For this reason it is well for a young man starting in practice in a city to arrange his program from the beginning to include at least one afternoon a week for recreation. If he adheres to this plan and uses the time judiciously it will add greatly to his health and happiness, and will benefit his practice as well.

"Drive thy business, let not thy business drive thee," as Poor Richard sagely remarks.

After all, the ideal life would seem to be associated with a practice in a country town, where one could have a comfortable income own his own home and garden patch, his dogs and gun, rod and reel, a good roadster or motor car, and time to enjoy them all, while conducting a practice which, because of the small expenses as compared with the cost of living in a city, enables him to accumulate some money, and where he can share the honors of leading citizen with the family doctor. But the lure of the city continues to draw them in, where they must either fail utterly, or become submerged with the more than tenth of mediocrity, or if successful, have the satisfaction of working themselves to death.

Is it worth while?

Man is so constituted that success is always worth while, cost what it may.

If men could only be content with enough and not be forever striving to gain things they have not because other people have them, they would live longer and be happier.

A few years ago when the Indiana State meeting was held at French Lick Springs, I saw Geo. W. Cook, of Chicago, known and loved by thousands for his genial disposition, as well as for his genuine worth, sitting on the hotel porch one hot afternoon, with his coat and hat off, looking a perfect picture of comfortable contentment.

Said I, "George, how would you like to be rich?" "Any man is rich, Harry," said he, "who is content with what he has."

Isn't that the truth?

WHY DENTISTS FAIL TO MAKE A SUCCESS OF PRACTICE.

By Grafton Munroe, A. M., D. D. S., Springfield, Illinois.

DENTISTS are not born, but, in the opinion of the writer, are strictly a product of evolution. Natural aptitude, as well as severe application to things scientific and mechanical, results in the best product. A prospect, after the completion of a dental course becomes an embryo dentist only to be worthy of the title of D. D. S. by continued study along dental lines and persistent diligence in every way that will perfect his technique—and develop his personal equation—

> "Seest thou a man diligent in his business—
> He shall stand before Kings." Prov. 22-29.

Many dentists lack diligence. Commencement day at the completion of their course in college means really "Quituation" day. They lack the determination to delve into the store houses of higher knowledge, but follow school ways all the rest of their professional life. Some men count the acquisition of a few dollars the sure evidence of success instead of making their successful performance of dental services the gauge of their right to the rewards of the same. Many dentists owe their business success to the efforts outside of their practice, but our subject limits us to the borders of dental practice.

Failure often comes from the wrong ideas of dealing with people. Our patients must be studied—their dispositions and temperaments. Our offices must be attractive—clean and tidy, as well as the person of the dentist himself must be conspicuously neat. Above all the moral character must be above suspicion and his office must be known as a safe place for a citizen to entrust his wife or daughter.

He must be master of circumstances—must study to acquire a calmness under nervous strain and must have a steady hand. There are some drawing cards that may *lead* to success of practice in the way of being a good mixer with men, but if a man is known as a good student and "on to his job" folks will seek his association and he will not have to make his social life a feeder to his professional success.

One dentist may be successful in practice in one community and on changing his location to another city may make a miserable failure—often times because the field is well enough filled and he cannot break in and establish a record. Many dentists fail to make a success of practice because they have so little sympathy with the class known as "our younger patients." "A little child shall lead them" right to the dentist's office because of the experience through which the younger one has passed and there is no stronger recommendation for a dentist than that he knows how to handle children.

Much money has been made by the unconscientious charlatan, but I take it that the methods of that class are not worthy our consideration, but for the pleasure it will afford the real decent practitioner—reference is made to the September number of *Hampton's Magazine* under the heading —"Tooth Tinkers."

Failure in methods of dental practice sometimes comes from yielding to the solicitations of the anxious or nervous patient to let the work go short of completion when the dentist himself knows it is not just right. Circumstances may sometimes compel a dentist to do things a little differently from what he would do at another time, but the conscientious operator will try to have his personal equation always tell for the best results and thus be far removed from failure that will always follow careless work.

With the full knowledge of the fact that the field for the practice of *deception* is ample, it is no wonder that the conscientious practitioner is so often brought face to face with failures in methods of practice, by the sight of poorly prepared cavities roots for crowning, as well as evidences of careless work in the finished product attending such poor efforts.

The young practitioner, as well as the old one, should have high ideals to work to, and by keeping close to the line thus set, make the likelihood of failures of practice very few in number and unusual.

IS THERE AN AGE LIMIT FOR DENTISTS, AND IF SO, WHY?

By M. H. Fletcher, M. D., Cincinnati, Ohio.

IN answering the above question, if I were to say there is an age limit for dentists, from the same viewpoint I should say the same thing of many other occupations. If perchance one should live to the three score years and ten, is it because he is or is not a dentist? Or is, or is not, a member of some other one of the professions or occupations incident to urban life. Our length of life and usefulness depends upon how we attend to the temple of the body, not upon our occupation.

I see no reason why a dentist should not be in continuous demand until seventy and past, Professor Osler notwithstanding; but we must be up and doing; that is, keep both body and mind in good health by giving each the proper amount of wholesome exercise. To overdo is to wear out early. To underdo is to rust out early. The members of any profession are estimated by the public at their real worth. Real worth means that he who offers his services must be up with all that is good, be it new or old. It would seem to me the maturity of judgment that comes after forty or fifty should be an advantage, in the elimination of errors and mistakes made by those of less experience, especially those mistakes of youth and young manhood, so that services rendered in mature life should be worth more and more sought after in the professions, dentistry not being an exception.

The execution of dental operations should be done with steady nerves and deft hands. These qualities can be kept into old age by proper training of the muscles which also trains the nerves. The whole body must be kept in vigor, that the hand and eye may have proper backing to execute skillfully. These properties of mind and body being present are felt and realized by others; They do not have to be on special parade.

I believe such a practitioner should be in special demand at increased fees, for maturity of judgment, associated with the proper strength and dexterity is what humanity demands.

Our Creator has endowed us with intelligence above that of the ordinary animal, and it would seem that we should honor Him and credit ourselves by comprehending and adopting to our environment the laws of health, of both mind and body.

Animals in the wild do not overeat nor overwork. Enemies, accidents and epidemics may shorten their existence, otherwise they live their allotted times, just as a flower or insect lives the short space of time allotted to it by the laws of its life.

Civilization has largely eliminated from us war and epidemics and has put within easy reach the knowledge of "The Simple Life," which tends to greatly lengthen the days of usefulness. There are certain broad principles that accomplish this which are easily understood and more easily applied. Earnest desire and reasonable search will put these before us. They are so simple that they are overlooked.

First, our tables are overloaded and we have not the courage nor judgment to refuse the passing pleasure of taste. The great bulk of disease comes from overeating. Those who eat the most are not the best nourished. The prevalent idea that one must eat heartily to be well is wrong, with but few exceptions. The habitual use of stimulants means bad physiology.

The indoor and inactive life of a dentist necessitates his reducing his food to the amount he can assimilate. We can all digest more than we can assimilate. Digesting more than is needed means functional disorder. The excretory organs being thus continually overworked become diseased. If we eat only that which is needed we escape most of the physical ills of life. These may be further lessened by such amounts of outdoor exercise as are needed to supply the pure oxygen and to give the proper work to all muscles and joints. By this is meant that amount of food which can be assimilated each day by each individual, be he doctor or peasant. Each one must learn to determine the amount by starting with the smallest quantity which reason dictates, not what taste dictates. Then apply the out of doors and the exercise. Out of doors means the daily amount of pure air and sunlight, both of which are as essential as proper food. One day a week in addition to Sunday is none too much, half a day is better than none. Exercise means such *daily* use of muscles, joints and blood vessels as will establish and maintain normal physiology in these tissues. Chest, arm and back exercises are most needed for professional life, since the heart and lungs are most essential. It is only necessary to train a few moments *each* day for good health. Right here lies a danger: good health thus obtained brings good appetites and also the danger of overeating again. Thus re-establishing the "vicious circle" as it were, which again lowers the opsonin, that great protective quality of the blood against bacterial invasion. Vacations once or twice a year cannot take the place of this needed *daily* regime and weekly rest.

Dentists, as compared with those employed in commercial life, are in a particularly good position to carry out such a regime, since they are, or should be, dictators in their own practice. Be the professional autocrat in your own office and say "No," when asked to give up an outing, or needed change. You will then have more to do, know better how to do it and get better prices. This applies as well to one building a practice as to one with a practice already established.

If there be a special age limit for a dentist it is the doctor's management of himself, not the fault of dentistry.

The paltry dollars made by "Workin' o' Nights and Sundays," as a rule, probably do more harm than good, because such management is contrary to the laws of good physiology, good mentality and good business principles.

Don't take anyone's word for the above statements. Measure the matter up for yourself with the yard stick of facts and apply them to yourself. The principles are very elastic and can be made to fit your environment.

Health of body and soul means happiness for you and yours, with no special limit to your three score years and ten. No purely dental practitioner can make much money, as that term is used today, though he may become happy, and wealthy in contentment, by proper management of his time, health and talents, being useful and in demand to a ripe old age.

When we have learned these lessons then will we know there is no unnatural "Age Limit" to the practice of dentistry, or in fact to any normal occupation.

WHAT SHOULD A DENTIST'S COMPETENCY BE AND HOW SHALL HE ACCUMULATE IT?

By Edward C. Mills, D. D. S., Columbus, Ohio.

IN reviewing the lives of many of the most conspicuous names in dentistry it is indeed a lamentable fact to find that so great a per cent have passed their later years in comparative obscurity, due to the stress of financial embarrassment—names that are household words in our profession by virtue of their contributions to our literature, as well as by the products of their inventive genius. The high merit of their skill commanded such fees as placed dentistry, in their hands, on par with any other profession, from a lucrative standpoint.

The large per cent of financial failures is unfortunately maintained down through the ranks to the most obscure practitioner, and when we consider that colonels and privates alike have so commonly met upon the battlefield of poverty, one is tempted to abjure all hope of a competency from the practice of dentistry and the admonition of Johnson that "the first years of life must make provision for the last," might certainly fill our cup of disappointment to overflowing. Is the fault due to our calling, or is it due to the improvidence of the individual? To some incentive, other than to serve humanity in a noble purpose, must be due the great numbers graduated annually from our colleges, and in casting about it must be attributed to some evidences of prosperity among dentists, and the ban upon the profession as a whole, owing to lack of business acumen, let us hope is not well grounded.

These exceptions are not all from the ranks of those who talk of their five, ten or more dollars an hour, or those who would "unionize" dentistry in advocating a fixed scale of fees, but are those men whose honest efforts to serve their clientele have in the second effect built up themselves. Skilled service has been combined with systematic business methods early enough in practice to be effective, and habit, established by custom, has made the rungs of their ladder to ease and comfort infinitely easier than with the person who has been a bungler in his professional and business affairs since his first year of practice. These men, like their parallels in a mercantile career, have not misapplied their energy; they have been prudent in their personal affairs and their efforts have been crowned with fruition. Their services to dentistry are not heralded by the blast of trumpets and consequently they are not so conspicuous in the professional limelight. Though usually the busiest practitioners they do not belong to the "haven't got time" class when called upon to perform some service for the profession. Instead of being long on talk and short on change, they are ready with yeoman service and purse to further an issue for the better interests of their profession—they compose that substantial class which is the bone and sinew of the profession.

The recent movement to require a higher educational standard for entrance into our dental schools indicates that the successful practitioner of the future must have his education rounded out to suitable proportions; the exigencies in the future will be no more strenuous than those at present, so far as the relation of education to financial success is concerned. This requirement seems to be advocated under the guise of "elevating the profession;" our ethical modesty seems to waive any consideration of the mercenary advantage. This imaginary need of placing dentistry on a higher professional plane, depending entirely on the exactions that are to be made of those desiring admission, savors of bosh; the profession is a dignified one and if its status is at low ebb owing to a general lack of culture, we who are in are responsible for present conditions and should share in the labor to be imposed upon those asking admission to our ranks. Cato began the study of Greek, Plutarch Latin, and Socrates learned to play on instruments of music, each at their eightieth year, and there is, no doubt, still opportunity for us to make amends for our shortcomings. That social position has its relation to professional success cannot be denied. Much has appeared in the journals recently concerning the social recognition of the dentist, and no doubt those clamoring the loudest have the least to commend them for such. If the fault is with the individual, his profession should not be made the scapegoat. While considerable rot has been sandwiched into the immense amount that has appeared relative to the educational requirements of the dentist, the fact remains paramount that this phase cannot be ignored - good judgment is the product of an educated mind, and errors of judgment are as disastrous as those of untrained skill.

Winning patronage is the fundamental element of success in any profession, and whether our competence depends upon the measure of the esteem in which we are held by our clientele, or whether it results from a mere bartering of professional service for money, the fact remains that skill unaccompanied does not always insure success.

An evidence of culture commands respect which begets the confidence of a clientele; time is money, and often that of your patient more valuable than your own, and it should be indulged in cautiously. The most vulnerable point of a taciturn patient is his hobby, which discovered, is well worthy of cultivation. Personally, the writer recalls the evenings of a week pending an appointment, spent reviewing astronomy, in order to reach one of these unapproachables, whose subsequent friendship has proven a valuable asset. One of the most successful practitioners of the writer's acquaintance, during the absence of some of his choice clientele on a cruise to the Orient, profitably refreshed his mind in Egyptian lore, which he used to his advantage and their edification after their return.

To be properly fitted for his life's work is a duty one owes to himself —to pursue a calling, not following the bent of his own mind, makes a simple task an arduous one, and thus handicapped, a remuneration, sustaining through the productive period is barely possible, and is one poorly calculated to offer much cheer for the declining years. Life, though short, affords ample time to change to a more fitting vocation, and one that might afford greater possibilities. To engage in practice for no other reason than that of having credentials is to reap a harvest of regrets; adherence to the code of ethics or resorting to the tricks of the charlatan avail nothing, as he gets all that is coming to him and it usually augurs want instead of a competency. Adaptation to your calling implies some degree of skill, and bearing in mind the old adage, "Keep your office and it will keep you," and as a motto *non progredi est regredi*, success as a practitioner will be inevitable.

Time is a large portion of the dentist's capital, which by his skill is converted into money. Touching its economy many of our profession are penny wise and pound foolish. This is well illustrated in contriving some device that can be substituted for some marketable appliance of superior merit, by the result of infinitely less time at the chair, than that required to make it. Just as profitably spend your time in making the office a clearing house for the petty gossip of the neighborhood. Time does not linger, and to meet your appointments your work must be in rhythm with it—this establishes punctuality, which gives system to your efforts.

There is but one quality of good service and the time required to perform it is practically the same for the average patient, and our capacity for work, in measure of time, is limited. Every practice has two classes of patients—those desiring your services regardless of your fees, and those to whom the matter of fees seems to be the primary consideration. As rapidly as a practice justifies the elimination of this second class, will follow increased earnings and a conservation of those energies so essential in a successful practice.

As for a competency, it matters little how lucrative a practice if some portion of the earnings are not set aside to create a fund for future emergencies. No example is more striking than to find an old practitioner, who, after years in successful practice, is obliged by dire necessity to plod along, handicapped by the flagging energy and skill that follow in the wake of advancing years. Making money and saving it are two different propositions, and in point of difficulty greater odds favor the latter. While economy is the cardinal virtue to guide in the provisions necessary to create a competency, it does not imply that we should follow the example of the man who continually ate the speckled apples in his endeavor to save the perfect ones. Effort merits some share of the good things of life. It has been said that "the whole show" has been seen by the thirty-fifth year, if a man has been a "live one;" if "life is a galling load" it behooves the thinking man not to be too inanimate, even though he is striving to shape his destiny that the luxuries of today may not become the necessities of the future.

An unusually profitable month seldom increases our ordinary expenses, barring supplies, and for this reason a competency should not be based upon a fixed per cent. of the net earnings, or a specified monthly sum. This has a tendency to cause one to relax in his efforts, and become supine as to the receipts the month following.

Touching fees and collections, it is immaterial how handsome or despicable they may be if there is laxity in the matter of collecting. The strongest asset of the dentist is his moral integrity, and is as great a factor in his commercial rating as his personalty or realty. This can be established only by conducting a practice upon the usual business basis, requiring a fixed period for settlements. If services rendered are worthy, a compensation is due, and a hesitancy to present an account, shakes the patient's confidence in the operator's skill and the longer the account runs the less vivid is the service in the memory of the patient. The supply houses have taught us the importance of receiving our monthly statements, in fact, we desire them; our rent and other monthly expenses we pay because they are due. Why should we be so philanthropic as to pay our creditors and feign that air of indifference as to our debtors, so prevalent among dentists?

Upon the husbanding of our profits our competency depends, and the professional man is not lacking for advice as to how his funds by proper (?) investment in some of the many El Dorados presented to him will net handsome returns. The more remote from civilization the greater seems the incentive to invest. Pleasant dreams of visionary wealth are the usual returns from most of these investments.

In a mercantile career any venture calling for additional investment of capital is ordinarily protected. The writer's attention was recently called to a case in which the success of a company depends entirely upon the knowledge of one man. To protect the investment from loss that would ensue in event of the death of this person, the stockholders have protected their interests by insuring the life of this man for an amount equivalent to the entire investment.

A professional man in his venture to secure a competency for himself, or those dependent on him, though he has the skill and business tact, has no assurance that he will have the necessary time in which to accomplish it. His necessity for protection is as important as that of the man in mercantile pursuits, and it is the consensus of opinion of the successful men in all vocations of life that this protection is the *ne plus ultra* of a professional or business career. It creates confidence, establishes a credit, and is a competency secured at once, instilling an ambition to economize during the productive period of life.

The man who owns his own home is ranked with the citizenship that gives stamina to the community with which his interests are more identical, than are those of the man who does not, and who is considered more as a transient with no fixed habitation. It has been argued that money can be more profitably invested, but usually the professional man who does not own his own home, owns nothing.

With protection and a home, surplus earnings invested in real estate or in good dividend-paying stocks will work twenty-four hours each day, at a time of life when we are unable to work at all. There is a contrast between the provident and improvident man, that widens with each succeeding year—professionally, financially or in any phase they are considered. Vicissitudes are the common lot of all and the time to prepare for them is in the hey-dey of life.

A man with an honest motive is the successful man, and is a credit to the profession that is the source of his income.

> "The man who seeks one thing in life, and but one,
> May hope to achieve it before life be done;
> But he who seeks all things, wherever he goes,
> Only reaps from the hopes which around him he sows,
> "A harvest of barren regrets."

PHYSICAL CULTURE FOR DENTISTS.

By G. E. Harter, Toledo, Ohio.

IF the doubt that dentists as a body are sadly in need of physical culture exists in the minds of any of my readers, let them attend the next convention and cast their eyes over the assembly.

A more anemic, adynamic, listless lot of cultured gentlemen it would be difficult to find.

Steps that lack springiness; eyes that lack brightness; cheeks that lack color; shoulders that stoop; voices that lack the positive ring of buoyant health—all speak of physical conditions away below par, far beneath the point of bodily efficiency necessary even to comfort, to say nothing of lofty achievement and long life.

While the body is by no means all of the man, nor most; while I would be the last man in the world to judge my friends by the condition of bicep and flexor, still it is an indisputable fact that man, in his present stage of development, is limited by the capacity of his physical organism so far as expression is concerned, while, so far as enjoyment of life and its daily duties is of value, bodily health and strength are considerations of prime importance.

High efficiency in any line of duty means and requires physical efficiency first of all. Buoyant health is a prime requisite to physical fitness, nervous energy and that sureness of touch and control of muscle so necessary in the hundreds of delicate operations which the dentist, of all men, is called upon to perform, quite as a matter of course, with no time for special preparation, that come to him in the most ordinary day's work, and which he must handle with all the skill of the most able surgeon, or suffer in reputation and purse.

Dentists do not compare favorably with physicians in this regard. Life-tables show that dentists are shorter-lived than doctors of medicine, or, for that matter, than members of any of the other learned professions.

It is difficult to understand why this should be true. As a rule, dentists have more time at their absolute disposal than physicians, far more than lawyers who enjoy equal emolument; almost incomparably more than mechanics and men engaged in commercial pursuits. The daily work of the dentist, while more onerous and exacting than that of almost any other professional man, is of such nature that, as a rule, with few exceptions, he can leave it behind him when he locks his office door, and it need not be given more than a passing thought until he dons his office coat at the beginning of another day.

These things being true, and it is assumed that they are true for the great majority, it would seem that the dentist has plenty of time to keep himself in the very pink of physical condition, particularly as no more than a single hour in each twenty-four is necessary to convert the anemic, flabby, soft, skinny, corpulent or sluggish body into an engine of tremendous power, efficiency and poise.

I happen to know of a case in point that ought to be interesting to every dentist who feels himself below the mark of physical fitness and comfort that he would like to attain. At forty-five, John Jones realized that he was an old man, rapidly approaching senility and physical decrepitude. He was stooped, sluggish, stiff of joint, flabby of muscle, irritable to the point of peevishness, while his face was a wrinkled map of selfishness and inefficiency.

In some manner, hardly known to himself, he became obsessed by the idea that these things need not be; that his condition had been brought about by plain and simple physical indolence, and that in order to remedy it, all he need do was to take firm hold of himself and reverse his mode of life.

Never athletic, he knew nothing about the simple apparatus in common use by those who have followed the lines of physical culture. Therefore, he proceeded to invent a system of gymnastics which he could, did and does practice daily while in bed. To cut out all details, which must be left to a future article, and proceed at once to results, John Jones today, at sixty, is worth an even dozen of the John Jones at forty-five, physically, mentally and every other way. In speaking of his condition today he says that he never had known the joy of living until he began putting into serious and daily practice the system that he had invented.

He can now run a mile so easily that he forgets that he is running; he can put up weights that many an athlete in training would find ample to test every muscle; while every organ is in perfect condition, performing easily and smoothly the intricate duties devolving upon it. His face is almost free from wrinkles; his shoulders have lost their stoop; his step is springy and elastic; his peevishness is a thing of ancient history; and, barring accident, he is good for forty years of active, useful, comfortable life.

That such desirable conditions are easily within the reach of every dentist is amply evidenced by the fact that Dr. J. B. Rich, of New York City, whose death was mentioned briefly in THE SUMMARY for October, and who lived to the advanced age of nearly 100 years, was, at one time in his life, and for many years, known as the strongest man in the world.

Here we have an anomaly; a profession that averages lower in the scale of physical efficiency than any other having, within its ranks, the perfect model of physical fitness, the strongest man in a world full of strong men, many of whom are able to earn more in a week than most dentists earn in a month by merely mastering a few athletic tricks and exhibiting them in ten-cent theatres or elsewhere. Nearly all of the stunts performed by professional athletes are easily within the reach of every dentist of middle-age or below, who is organically sound, provided that he is willing to shake off the cloak of physical sloth, and devote a single hour of each day to a rational, easy, pleasant and most enjoyable system of physical culture, coupled, of course, with rational dietetics and natural living along other lines.

Which do you prefer? Do you prefer the "lean and slippered pantaloon," the "shrunk shank," the wrinkled visage, the stooped shoulder, the flabby muscle, or the elastic gliding muscles and buoyant health of John Jones at sixty, stronger than any of his sons, of whom his young wife says: "My husband is the handsomest man I ever saw!" Take your choice. One is almost as easily had as the other.

In future articles I shall endeavor to outline a system that has been tried and found adequate; a system so simple and easy that it ought to appeal to every man, be he dentist or not, who cares for even a moderate degree of that physical efficiency which alone makes life enjoyable.

To be continued

The semi-annual meeting of the Wisconsin State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the state of Wisconsin, will be held at the Wisconsin College of Physicians and Surgeons, corner Fourth Street and Reservoir Ave. Milwaukee, beginning Monday, January 8, 1911, at 9 a. m. For application blanks and general information address G. C. Marlow, Sec'y, Lancaster, Wis.

THE QUALITY OF SERVICE RENDERED.

By Eugene S. Talbot, Chicago, Illinois.

IN these days of progressive medicine, the following question is pertinently before us, "Is the dental profession rendering the quality of service to their patients that is expected?"

Viewing the subject from a broad medical standpoint, it must be answered in the negative. As a profession we have never been educated to the height of our responsibilities. We are obliged, therefore, to hold a position much inferior professionally, socially and from a business viewpoint to other departments of medicine simply because we possess an inferior knowledge of the possibilities of our calling.

Born at a time when the mechanics of dentistry was all that was known, owners of dental schools and their teachers have not considered the wide scope of our calling except from a commercial viewpoint, and the original idea of the mechanic art and therefore the profession is based on this low standard. The result is proficient mechanics. The community is safe in consulting any dentist for ordinary operations upon the teeth. But when such services are rendered the dentist has accomplished all he is qualified to do, that is, simply repair the leaks.

Fortunately for the community when the leak gets beyond repair, the tooth or teeth can be removed and artificial ones inserted without injury to the patient's health. All this the student of dentistry has been taught and he is capable of carrying his patient over any similar crises. He considers the teeth foreign bodies which can be manipulated, indiscriminately without detriment to other parts of the body. Being thoroughly drilled along these lines and not appreciating the law of cause and effect, he often carries his mechanics too far to the detriment of the tissue under treatment; to the injury of other tissues of the body or to the individual. Thus crown and bridgework are placed upon teeth that have lost their support from the alveolar process and are only held in place by the fibrous part of the bony process. Crowns are placed upon teeth with live pulps which later die, causing inflammation in surrounding tissue, abscesses and not infrequently necrosis or blood poisoning, from which the patient may be laid up for years and possibly never recover. When complications arise a different picture is presented. In most cases the dentist is at sea and the physician is called in to relieve the responsibility.

Educated as mechanics, we are fortunate in possessing an anesthetic (nitrous oxid gas) which is almost absolutely safe. So much of the gas is used in this country if it were not for this safety, owing to our ignorance of the functions of the body, many deaths would occur. In other countries where ether and chloroform are more extensively employed, deaths are constantly taking place. Foreign countries are about to pass laws preventing dentists from administering anesthetics because of their ignorance of the functions of the organs of the body.

The part of our specialty, however, in which the quality of service rendered is most deficient is the biologic side. While an attempt is made to show the importance of this branch of medicine by a display of Professor-this, that or the other on the faculty of our dental schools, yet so poorly is this department of medicine taught that students who attend the same lectures in a university medical school, after attending a three-years course and graduating in dentistry, are not sufficiently educated to obtain credit of one year in a medical course. This is a tenable blight on the methods of dental teaching since the student has paid enough money and spent enough time, if properly employed, to get two years' credit in any medical school. The result is, he is ignorant of the influence of disease of the body upon the tissues of the mouth, as well as the influence of disease of the mouth upon tissues of the body.

I am glad to say, however, there are a few stomatologists (medically educated dentists) who have spent much time in the study of diseases of the mouth from the biologic standpoint. Researches have shown that not a single disease of the body, including the intoxications, but are reflected in the organs of the mouth sooner or later. Many of these diseases are first pictured in the tissues of the mouth. The tongue, alveolar process and the dental pulp, being end organs, are first to receive impressions of systemic disturbances. On the other hand, decay of the teeth, inflamed gums, interstitial gingivitis, pyorrhoea alveolaris and a mouth filled with microbes not only cause diseases of the alimentary canal, but have their influence in diseases of the air passages, such as tuberculosis, pneumonia, diphtheria, tonsilitis and other infectious diseases.

If we were medically educated, instead of being considered the most insignificant department of the healing art, we would become the most important. The knowledge thus obtained would place the dentist or stomatologist in the front rank of diagnosticians of general disease and we should then be able to dictate the nature of prophylaxis in preventive medicine.

Owners of dental schools always have, and are yet dictating the policy of teaching, hence the low standard of the graduate. The medical profession are alive to the necessity of a better education for their graduates. Money is given freely for new buildings and the latest equipments are installed. The poorer schools are of necessity going out of existence and a brighter day is dawning for medicine.

What is the dental profession doing to improve our specialty, so that our patients shall obtain a better quality of service? It is high time we awakened to the possibilities of our calling and the requirements of our patients. We should arouse ourselves, pass laws in every state like those of Virginia, which require that every dentist coming into the state after a certain period must possess a medical degree from a reputable medical college.

We should by this method receive our share of the donations now so liberally bestowed upon the medical schools. Laboratory researches can then be conducted and our knowledge of disease of the mouth thus be broadened. There will be no discrimination as to rank in the profession and we shall be able to render that quality of service so necessary, but so little understood at the present time.

THE YOUNG MAN IN THE DENTAL PROFESSION.

By William C. Fisher, D. D. S., New York City.

IT is the purpose of this paper to invite your attention to a discussion of the social and professional position occupied by the young men within the dental fraternity, because I think that position can be improved and all greatly benefited thereby.

I would define young men, so far as this paper is concerned, to be those who have practiced from about five to ten years. To the very young practitioner and recent graduate there can be but one position in the profession that he can with profit fill—and that is the position of the *inexperienced.* He should indeed be a *graduate student,* affiliating as soon as eligible with his local society, attending all meetings and prove a good listener. In other words, make his attendance on the dental societies his post-graduate course.

Further, it would be wise for him to seek frequently the council of older practitioners—if possible associate with them and learn the little details and methods that have given them their successes. In so doing he has everything to gain and will lay for the future a good foundation.

We will now pass to those young men who by diligent application to their work have begun the establishment of a favorable practice and gained a good amount of experience and efficiency; for they are certain to have done so if they have applied themselves somewhat along the lines just laid down for the young graduate.

In the past the young men have been kept very much in the background, so that often the best in them has either never been developed and encouraged; or at least not until rather late in life. Why has he not been encouraged to more scientific work—as is so frequently the case with younger medical men.

The professional career of the dental man is somewhat shorter than the medical, therefore it is even more essential he be encouraged to develop early such ability as will enable him to—while yet young in life—take an important position in his profession.

Much can be gained by a closer relation between the older man, with his ability, experience and conservative judgment—gained through years of application to his work—and the young man of ability, full of enthusiasm. The enthusiastic young man guided by the experience of the older may quickly develop into a creditable scientific and practical man; or even yet—that rare personage—a *genius.*

The question might be raised, but what does the older man receive in return for the advice and guidance, without which the young man must continue to be tardy in his development? The reward to the older man will indeed be good.

Enthusiasm and ability, plus experience and ability is sure of a more efficient product—which must necessarily be joint property. Further, not only will the individuals profit, but the whole dental fraternity—by a long and general continuation of such conditions be greatly benefited and advanced. If there was more of this real closer relation of the older and younger men of our profession there would be a rapid disuse by the public of that lame excuse, to the effect that he or she left Dr. Blank because he is getting behind the times and that they have gone to a young dentist, who is wrapped up in his work and has all the modern methods. That person may or may not have mistaken office furnishings for "modern methods;" and they frequently may be unjust in their judgment of the older man. Nevertheless, it is an excuse, very favorable with the general public and it is very probable, had the older men, long ago established closer and more congenial relations with younger men—they themselves would have kept younger and the public deprived of their pet slogan.

It is in just such a time as this that a young man has his conception of ethics put to test. Of course there is no reason why he should not receive the patient—for all young men must start and their patients for the greater part come from older practitioners; but he should *never* adversely criticise the work of a former operator. I can think of no case, unless it be malicious malpractice--wherein he is justified in any manner whatever passing adverse judgment on the patient's former dentist. I am glad to speak of this at this time, as I do not think it is sufficiently impressed upon young men when they leave college:

> "To thine ownself be true—
> And it will follow as night the day
> Thou cans't not be false to any man."

(and that includes the young man's teachers and *confreres.*)

I feel sure that a closer relation of the older and younger men will greatly benefit the local society work, wherein more cordiality will tend to eliminate the political aspirations of the few and the society turned into a live organ of research and exposition. There would be less unjust criticism and an elimination of that terrible monster "jealousy" which today often seems to estrange our older and prominent men. If the young man was truly the student and *confrere* of the older men, he would, I think, draw them closer and in some instances eliminate the latent jealousy which is often evident today.

There is one other relationship that should not be passed without comment. It is that of the young men to each other. It is clear that this at all times should be one of good fellowship. Frequently an expression of genuine friendship will prove a stimulus, second only to the endorsement of the older and prominent men.

This can be extended to the young graduate and may prove the same excellent influence to him that you as a young practitioner wish were extended to you by those your senior in practice.

I do not hope for a state of perfection in all of the conditions outlined in this paper, for we all, old and young, are but human, and prone to err, yet there is room for improvement in the young man's position—its conditions and relations, and it is toward that improvement that I invite your serious attention and efforts.

EXTENDING THE FIELD OF DENTISTRY

By W. G. Ebersole, M. D., D. D. S., Cleveland, Ohio

THE SUBJECT of "Extending the Field of Dentistry," which has been assigned to me by the Editor of THE SUMMARY, is one so broad in its scope that the writer is troubled to know what phase of the subject he shall select, from the many which present themselves, for discussion in a paper under the above title.

To attempt to discuss this subject from all its different aspects would make a voluminous paper, and would inflict a hardship upon the writer which he is not at the present time willing to assume.

It is our belief that the Editor in securing our promise to write a paper on this subject intended that we should devote the major part of our attention to that phase of the question which bears more directly upon the opportunity afforded in dealing with the laity.

While this is a most important, if not *the* most important phase of the subject, we do not wish the readers of the paper to feel for a moment that we are not keenly alive to the possibilities which lie in other directions.

"Extending the Field of Dentistry" in its relation to the laymen, while, as stated above, a most important if not *the* most important phase of the question, is by no means the most difficult of accomplishment.

To extend the field of dentistry through, with, and in the profession is the most difficult task which presents itself to those who are ambitious to see the profession advance to, and maintain the rank which belongs to it if it will but meet the obligations which the world has the right to expect and should receive at the hands of this profession.

This phase of the question is not a popular one. Few of us are willing to pause long enough to consider our own shortcomings when we can look ahead and see where we can probably advance by ignoring or covering up our own deficiencies while we point out the neglect of others.

We have been somewhat severely criticised in the past for calling attention to some of the shortcomings of the profession. None regret that he has found it necessary to criticise more than the writer himself; and, none knew better than he the effect his words would produce when they fell under the eye or upon the ear of those who "feel called upon" to exert their energies in "protecting" the "dignity" and "wisdom" of the dental profession.

The writer would that he might accomplish the same end by using words of praise and commendation rather than the reverse when attempting to stir men to the realization of their full obligation to mankind. Praise and commendation are well in their place, and are productive of much good when properly applied; but, it is the tongue and pen of the critic that has stirred the best and broadest of men to perform the noblest and grandest works mankind has produced.

Therefore, dear reader, if some of the statements made and the criticisms offered are such that they touch your vanity and tend to lower the pride you feel in your profession, just bear in mind that we are writing with a view of inspiring you to put forth your best efforts to aid in the correction of faulty conditions which exist; and, thus assist in placing the profession in the status to which she is justly entitled.

"Extending the Field of Dentistry." With from 95 to 97% of our public school children showing faulty conditions as has been proven in connection with the public schools of both Boston and Cleveland; and with careful estimates showing less than 10% of the people receiving any care and attention, from a dental standpoint, other than extraction, there is a wonderful opportunity for the extending of the field of dentistry in this direction.

The condition is an appalling one, and who is responsible? We regret that we must acknowledge that to the dental profession more than to any other influence belongs the credit for this status of affairs.

The medical profession must bear its share of the blame; but, to dentistry and not to medicine belongs the duty of enlightening the public as to the proper care and treatment of the oral cavity.

Dentistry of the past has been dentistry devoted principally to the care, treatment and correction of existing conditions, giving little or no thought and consideration to the prevention of the faulty conditions, which it was called upon to handle.

It is true that there were isolated cases where men were making heroic efforts to call the attention of the professon to the necessity of taking up this side of dental practice; but fewer men still were making any special effort to create in the minds of the laymen a sufficient interest to induce them to properly use and care for their mouths.

To properly treat and correct faulty conditions of the oral cavity is indeed a noble calling, and so great the need of the same that the members of the profession might well turn their time and attention in this direction alone: and well has it been done; but at what a fearful cost to humanity.

I repeat that more than 97% of humanity is in need of dental services, and that less than 10% receiving proper care and treatment, are the conditions which we find existing with the laity.

Let us look for a moment at the professional side and what we find there.

Let us travel from coast to coast and from the Great Lakes to the Gulf, and let us study the dentists, great and small; and I will ask if it is too much to say that less than 3% of them are earning more than a comfortable living, while the great majority of the remaining 97% are merely ekeing out an existence while seeking to care for the faulty conditions which exist in the American mouths today.

Is my statement too broad? Let us see. I would only quote Dr. Lewis T. Jack, of Philadelphia, who said, in speaking of Philadelphia dentists, that of all he had known but one ever made more than a comfortable living.

An alarming condition, is it not? Both on the part of the laity and the profession.

We have said that the dental profession was responsible for existing conditions. We would not criticise. We would not condemn. Our sin has been one of ''omission'' and not of ''commission.'' We have done the best we knew. We have fought valiantly and well to save the teeth of humanity.

And, yet, after all these years of constant and untiring effort to perform our duty to humanity, we find that for every ten mouths receiving care and treatment practically ninety are being neglected.

Could there be any more conclusive evidence that we have failed to perform our full duty to mankind?

We have stated that our sin had been one of ''omission'' and not of ''commission.'' Our failure has been in our interpretation of our code of ethics. Certain rules and regulations have been laid down for the control of the profession, which related to their obligation both to the laymen and the brother practitioner.

We have no fault to find with our code of ethics. It is the interpretation usually placed upon the same by the members that we would criticise.

Ethics, briefly stated, is the science of human duty. It is the law which covers our obligation to our fellow being. Professional ethics is, therefore, the science which should teach us our obligation to humanity, and instruct us how to execute the same.

There has been some false move somewhere, else humanity would not be floundering in ignorance as she does, and dentistry be hovering on the threshold of poverty.

No other profession or calling offers so great an opportunity either for the development and advancement of the individual entering the profession, or to benefit and improve the physical condition of mankind than does dentistry through the treating, correcting and preventing of a condition which is the greatest handicap of the human family today.

Again I would call your attention to the fact that 97%, and more, of humanity has been found to have faulty oral conditions. Careful estimates show that less than 10% of the people of the United States receive dental care and treatment other than extraction. This, coupled with the statement made by one who has spent a number of years in constant contact with the members of the dental profession and their patients, who says, "Of the 10% of humanity receiving care and treatment other than extraction, but few receive more than a small percentage of the dental service necessary to keep the oral cavity in a perfectly healthy condition," places us in possession of a knowledge of the actual conditions which are simply astounding.

Let us figure for a moment and see just where we stand. Say that we have eighty millions of people in the United States, of whom only 10%, or eight million, are receiving any care or treatment other than extraction, and we have left seventy-two million who receive no care or attention from this standpoint other than extraction.

It is said that there are thirty thousand practicing dentists in the United States. It therefore requires thirty thousand dentists to give to eight million people the kind of service that is being rendered today. But we have 90%, or seventy-two million of the inhabitants unprovided for, and therefore if it takes thirty thousand dentists to afford the present kind of care and treatment for 10% of our people, it will require three hundred thousand to give the same kind of care and treatment to all the people in the United States. But, our friend of experience with dentists and their patients states that the eight million receiving care and treatment receive but a small amount of the service necessary to place and maintain the oral cavity in a perfectly healthy condition.

Let us be conservative, and say that 50% of the needs of the eight million people are being properly handled by the dentists of today. If this is a conservative estimate, and we believe it is, then we must double our estimate, and we will find that we would need six hundred thousand dentists to care for *all* the people of the United States as they should be cared for. Some room to grow, don't you think? And, some fault somewhere, else there would not be such a condition. That fault lies with the Dental Profession.

The fault has been in our failure to teach the importance of the teeth to the masses, instead of but to the few. We have kept our light under a bushel, as it were, not letting the knowledge of our accomplishments and abilities reach humanity as a whole.

We have not kept pace with medicine in this respect, because we have lived within four walls and the result of our discoveries and our inventions have been confined within the same space, while medicine has gone out into the highways and byways carrying knowledge of the advancement made in her sphere.

Our sin of "omission" has been in not preaching and teaching the important part that the teeth bear relative to the physical economy and the necessity of affording them proper care and treatment.

But, how shall we do this? We would offer as the best possible manner of procedure, the plans and methods recommended and employed by the Oral Hygiene Committee of the National Dental Association, from which I quote:

"After careful deliberation the Committee agreed upon a plan for a campaign in which the three greatest educational factors in this country should be used in spreading the Oral Hygiene propaganda. The Public School, the Public Press and the Public Platform."

The public school educational system proposed is as follows:

"First: To make a cursory examination of the mouth of each school child and the sending into the home of a record of that examination, bringing to the parent or guardian a knowledge, perhaps the first knowledge, of a faulty oral condition. We advocate the appointment of one examiner to a school as the best method from an educational standpoint. There are two reasons for this, first, Johnny Jones may be examined today and takes home a blank; next week his sister Mary is examined and a similar blank is taken home, and the following week his brother Samuel falls into the hands of the examiner and for a third time the attention of the parents is called to the importance of the mouth in its relation to the health of their children.

"The second reason is that the frequent visits of the examiner to the school brings to the minds of the children seeing him there, the importance of the mouth and teeth, and the psychological effect is of great value.

"The second step in our school educational system puts into the schools, when the examiner has finished and the parents and pupils are prepared for them, a system of lectures which explains the purpose, use, care and treatment of the mouth.

"Third, and last, in the school educational campaign is the establishment of the dental clinic, not for the purpose of relieving Mary White's toothache, nor for the filling of numerous cavities in the teeth of Jimmie Jones from a philanthropic standpoint. Oh, no! But to make it possible to secure data which will show the value of the healthy oral conditions as related to the working efficiency of the child from the economic side of the question so that the municipality or state may be induced to take up the work of teaching the proper use and care of the teeth and oral cavity.

"The value of this system of education is to be obtained from the school reports of the pupils, preceding and following treatment.

"The Public Press Educational Campaign proposes to give to the press and public, information and data which would produce a knowledge of dentistry and its importance to the health and welfare of the human family; which would place dentistry in the sphere where it belonged in the public mind; and forever silence the ridicule that has pervaded the public press when dental topics were discussed.

"The Public Platform Educational Campaign proposes the locating, selecting and organizing of a corps of lecturers capable of handling any kind of an audience from a Mothers' Club on through the various organizations up to and including the various committees of the United States Senate.

"Last, but not least it was proposed to establish a Bureau of Education and Information which should deduce and correlate from the results of the work in the three great departments mentioned, Public School, Public Press and Public Platform, the data necessary to secure the greatest cooperation between the various branches of the work and thereby make the work in each branch most effective.

"We wish to state that the Bureau of Education and Information has been established and data and information are being collected which will enable us to go before the world, not with unproven statements, but with statements so backed by facts and figures that no possible question can be raised as to their value. Put your statements, facts and figures in dollars and cents, if you would reach the American people and the governments they control.

"We will also say that a monster publicity campaign has been planned for driving the knowledge obtained home to every corner of the universe in the most telling manner. We said, a monster campaign had been planned; we will go a step farther and say that the foundation has been laid in Washington, and the proposed plan approved by those on the ground.

"A move upon Washington! you say. Why, we have been moving on Washington for years and have only met with rebuff. Yes, we go to Washington, but not as we have gone in the past. Our method has been to go to Washington, and through Washington reach the people. In this we hold that we have been making a mistake. We have reversed the order in our new method. Go direct to the people with your message. Reach your congressman, your senator, at home, where and when he has his ear to the ground to learn what the people want. Do not wait until he gets down to Washington and then write to him when he has his eyes and ears trained upon the politician and the trust magnate to learn what they want.

"Good story, you say: but, can you do it? Yes, and in a manner so simple and effective that it cannot possibly fail.

"To do this we must have local Oral Hygiene Committees appointed all over this land, composed of men who are known to be not only in sympathy with the plans of the National Committee, but men who will work in harmony and are willing to do things.

"In addition to this we want an auxiliary committee to work with the National Committee, composed of two hundred and forty or forty-five men, from every State in the Union, men who are at the head of local work and known to be not only in accord with the present policies of the National Committee, but men who are willing to do and can do things. Men who know or will find someone who knows someone who knows somebody that knows and is intimately acquainted with a senator or a congressman, and thus indirectly reach them directly and on their own ground.

"Combine the Oral Hygiene working forces of the country under one head and have them so organized and their methods so executed that every ounce of energy put forth will bring full value in return.

"Governments will then give us that for which we seek and then, and then only, will every State, every municipal and every school government be open to us.

"The plan is entirely feasible, it will work here as well as elsewhere. We have tried it elsewhere, on a smaller scale, to be sure, but on a scale sufficiently large to know whereof we speak.

"In addition to this we want Oral Hygiene Councils organized over the country, that are councils in fact as well as in name.

"Oral Hygiene Councils should not be composed of and controlled by the members of the Dental Profession only, but should be composed of and officered by people representing every walk of life, if the most good is to be accomplished in the dissemination of knowledge and data furnished by the profession."

In closing, we wish to say to our readers that if all the members of the profession who are interested in extending the field of dentistry will get in close touch with the Committee on Oral Hygiene of the National Dental Association, and place their services at its disposal in aiding and supporting the general work undertaken by the Committee, the Committee will be in position to do a tremendous amount of good, both for the profession and for humanity during the coming year.

If the efforts that are being put forth by the National Committee to extend the field of Oral Hygiene receive the endorsement of all those men who are interested in the cause, and these men are willing to adopt certain principles and policies and then fearlessly and honestly execute them; the field of dentistry will be extended beyond the fondest dreams of any dentist.

With such influence and co-operation it will be but a short time until every school boy and girl and every government in the land will know and understand the true value of the mouth and teeth and dentistry will come into her own. Dentistry will stand as it should stand, on a par with the best of medicine, not only in the minds of the public, but in rank and recognition by governments.

Too long have we remained idle. The time has come to act, and we must act now or accept the ridicule of an intelligent people. Let us act now, wisely and well, in the interest of the American Home, in the interest of the American Public School System; aye, in the interest of mankind as a whole; and thus receive the reward that awaits one who has done his duty faithfully and well.

THE ADVANTAGE OF FRATERNALISM AMONG DENTISTS IN THE SAME COMMUNITY.

By Carl D. Lucas, D. D. S., Indianapolis, Ind.
Professor of Dental Anatomy, Histology and Embryology, Indiana Dental College.

SINCE all knowledge is gained by comparison and all scientific deductions are made by the elimination of theories which have no definite proof, we are brought face to face with the subject at hand.

Few men are geniuses, therefore others of us must strive, by association, comparison of ideas, criticism of methods, discussion of details of practice, and elimination of errors, to conquer the false theories which our feeble minds have conjectured. However, every man, whether educated or uncouth, fortunately for the human race, is more or less original along some lines of thought and practice. By association we may compare our ideas and conclusions, thereby we may each be benefited, whereas, were we deprived of other individual's talents our progress would be retarded.

Professional fraternization in the same community gives us the opportunity of becoming familiar with the results of our co-worker's energy and even the most untrained mind can grasp some of the best ideas from the more fortunate individual. On the other hand, the most uncultured mind may evince some of the qualities of genius and develop a method of procedure unthought of by his educated brother. This has been observed and demonstrated year after year in local, state and national society work. The proof stands in the elevation of the profession to its present status. No profession has so rapidly advanced as has our chosen profession and we know this rapid progress is not the result of one or a few men's efforts, but is the result of associated co-operation, study and research.

False theories have been and are being advanced by men absolutely sincere in their belief, only to be shattered by individual or associated research. However, the most far-fetched idea may be productive of the evolution of a definite principle in the science or art of this profession, and even though the individual presenting the theory may be uncertain of its logic, he owes it to his profession and to himself to present the subject as he views it, for friendly criticism.

No listener ever gained as much by hearing the presentation of a theory, or seeing the technique of an operation as the man who studied out the result. However, the new ideas advanced compel the hearer to think and reason out the feasibility and logic of the subject, thereby each is benefited by the discussion brought out by the association of ideas.

The man who practices his profession for self gratification only and does not associate professionally with his co-workers is the unfortunate loser, for we must compare ideas, present new thoughts, new methods of technic, ingest and digest the best things of our profession, or we shall surely retrograde from lack of stimulation to ambition. Undoubtedly it is far better to be criticized for our shortcomings than to practice our misinterpolation of honest efforts, seemingly correct.

The individual who debars self from association loses, besides the best professional ideas, the one great good blessing to mankind, that of good fellowship. If he could see and feel the bond of good fellowship grow stronger and greater at each succeeding meeting, know the great pleasure of grasping the good right hand of his brother in the profession, see others renew their acquaintance and feel the bonds of love for one another tightening at each meeting he would surely exert himself to first cultivate congeniality which would eventually bear the fruit of good fellowship and love for his fellowman. Then he would begin to live and know of the love for living.

Especially does association become a pleasure to the man who is practicing within the smaller towns. He cannot have the pleasure of meeting daily and conversing with his professional brothers, as does the man who is located within the cities. He must work day after day, putting his best energy into his results and be deprived of the privilege of discussing the subject in which he is most interested, with men who have the same interests in common. But when he takes a few days' vacation and goes to the local, state or national association meetings and enters into discussion of the good things of his profession he becomes stimulated to reach out and perfect new results to the mutual benefit of self and the people who may confide themselves to his care and judgment.

In times past, we are told, there was a feeling of petty jealousy existing among the members of the profession. Thanks to the progress of civilization and higher moral and mental education that time has passed. Supremely better is it to see the bonds of good fellowship usurp the place where were once entwined the gnarled and twisted threads of jealousy. Those days, if they ever did exist, are past and gone forever, and we may now be co-workers, not obstructionists.

The advantages of fraternalism and association combined with sincere desire and conscientious effort to elevate our profession at large has stimulated us to further cultivate our talents, giving everything good we may possess to each and every one of our fellows.

Therefore, let us strive to instill more energy into our advantage of fraternalism, thereby gain more for our personal betterment, increase the bonds of good fellowship and love, emulate our higher ideals for the best there is in all of us collectively, and strive ever to plant the emblem of our noble profession upon the highest pinnacle of success.

A CONTINUATION OF THE SYMPOSIUM ON THE BUSINESS SIDE OF DENTISTRY

SO many excellent articles on the business side of dentistry have been contributed for THE DENTAL SUMMARY that we have thought best to run the symposium in two numbers of the journal and the articles will be continued in December.

LISTERINE

The best antiseptic for a dentist's prescription

As a daily wash for the preservation of the teeth, and for maintaining the mucous membrane of the mouth in a healthy condition, Listerine occupies a first place in dental and oral therapeutics. Listerine is truly prophylactic, in that it exercises an inhibitory action upon the acid-forming bacteria of the mouth, and thus maintains the alkaline condition so necessary for the welfare of the teeth.

LISTERINE TOOTH POWDER

An innovation, in that it possesses neither fermentative nor harshly abrasive ingredients, Listerine Tooth Powder very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouthwash of Listerine, suitably diluted.

¶*The undersigned will be pleased to send supplies of Listerine Tooth Powder samples for distribution to patients, upon receipt of the dentist's professional card, and this advertisement.*

Lambert Pharmacal Co., St. Louis, Mo., U. S. A.

UTAH STATE DENTAL BOARD.

The regular meeting of the Utah State Dental Board, will be held in Salt Lake City, on December 6th and 7th inclusive. All persons desiring to secure licenses, should address the Secretary and procure applications. Applications must be returned to the Secretary, with the fee of twenty-five ($25.00) dollars not later than December 1st. For further information, address the Secretary, A. C. Wherry, Salt Lake City.

THE NORTHERN INDIANA CONVENTION

What's the matter with the Northern Indiana Dental Society?
She's all Right!
Who's all Right?
The Northern Indiana Dental Society!
"Has anybody here seen————?"

The twenty-second annual meeting of the Northern Indiana Dental Society was held at the Oliver House, South Bend, Monday and Tuesday, October 17 and 18, 1910, and if indications may be trusted, is sure to tarry long in the grateful memory of every man, woman and child who had the good fortune and good sense to attend.

Complete report will appear in following issues of The Summary, including the most excellent papers, which, in spite of the oppressive summer heat, were listened to with close attention, and well discussed.

At the executive meeting Tuesday afternoon, Lafayette was chosen as the place of meeting for 1911, with Gary a close second, and the following officers elected.

President: J. W. Stage, Goshen.

Vice-President: Clem Shidler, South Bend.

Secretary: M. E. LeGalley, LaFayette.

Treasurer: Robert Gillis.

Supervisor of Clinics: W. R. Meeker, Peru.

The Executive Committee is yet to be appointed.

Active interest in the campaign for popular education was manifested on all sides, it being made very plainly evident that members of the Northern Indiana are awake to the duty, the responsibility and the opportunity of the hour.

And the banquet! The dentists of South Bend and Mishawaka covered themselves with glory. Nothing was lacking to make it perfect in every way.

IOWA BOARD OF DENTAL EXAMINERS

The Iowa State Board will hold a meeting for the examination of candidates for license to practice dentistry in Iowa, beginning December 5th, 1910, at 9:00 a. m., in Des Moines.

For blanks and other information write the secretary, E. D. Brower, Le Mars, Iowa.

THE DENTAL SUMMARY

The Magazine That Helps

Vol. XXX DECEMBER, 1910 No. 12

OFFICIAL ORGAN:

The Ohio State Dental Society
The Michigan State Dental Society
The Indiana State Dental Society
The Kentucky State Dental Society
The Louisiana State Dental Society
The West Virginia State Dental Society
The Northern Ohio Dental Society
The Northern Indiana Dental Association
The Eastern Indiana Dental Society
The Southwestern Michigan Dental Society
Odontological Society of Western Pennsylvania
The Lake Erie Dental Society

and Several Local Dental Societies.

Editorial Office; 1255 Neil Avenue, Columbus, Ohio
L. P. Bethel, M. D., D. D. S., Editor-in-Chief

DISTRICT EDITORS

District	Name and Address
Chicago	Dr. A. D. Black, 31 Washington St.
Minneapolis	Dr. F. B. Kremer, Masonic Temple
St. Louis	Dr. E. E. Haverstick, Boyle and Maryland
Kansas City	Dr. Martin Dewey, Argyle Bldg.
Denver	Dr. A. W. Starbuck, 14th and Arapahoe St.
Los Angeles	Dr. B. Frank Gray, Security Bldg.
San Francisco	Dr. Robert Dunn, 323 Geary St.
Detroit	Dr. E. B. Spalding, Gas Office Bldg.
Indianapolis	Dr. Carl D. Lucas, "The Willoughby"
Cleveland	Dr. H. R. C. Wilson, Schofield Bldg.
Buffalo	Dr. J. Wright Beach
Pittsburgh	Dr. H. E. Friesell, 6120 Center Ave.
D. C.	Dr. W. Warrington Evans, Hamilton, Va.
Louisville	Dr. H. B. Tileston, Equitable Bldg.
Memphis	Dr. D. M. Cattell
Atlanta	Dr. Thos. P. Hinman, 4th. Nat. Bank Bldg.
N. Orleans	Dr. J. A. Gorman, Maison Blanche Bldg.
Richmond	Dr. F. W. Stiff, 600 E. Grace St.
New York City	Dr. W. H. Sieberst, 1 W. 34th St.

Yearly Subscription, $1.00 in U. S. Canada $1.40.
Foreign, U. P. U. Countries, $1.75. **Advertising Rates on Request**

Neither the editor nor publisher is responsible for the views expressed by authors in the reading matter published by THE DENTAL SUMMARY

REGULAR CONTRIBUTIONS

KEEPING DENTAL RECORDS

By Dr. Arthur D. Black, Chicago

AN ACCURATE record of every dental operation is almost as important as the operation itself. Such a record has come to be a necessary part of the routine of the progressive dentist. One could in most cases form a very accurate opinion of the quality of a dentist's operations by an examination of his record. The man who does not keep a careful record of every operation is not practicing very good dentistry. Accurate records and high class dentistry will usually be found in the same office.

There are two important and distinct objects to be considered in record keeping; one is to keep such a record of the operations for each patient that the entire history of the service rendered for each may be quickly at hand; the other is to keep a record in such form that classes of cases and operations may be so grouped as to be of value from the standpoint of the development of scientific dentistry.

Medical literature of today is full of deductions drawn from carefully written case histories and particularly from the grouping and comparison of the records of a large number of cases of the same disease. Probably no one thing has contributed so much to the progress of medical practice as the careful writing and systematic preservation of case histories. For example, Dr. Osler in his "Practice of Medicine," in the chapter on typhoid fever, states that his writing on the subject is based on 1500 cases at the Johns Hopkins Hospital, and throughout the fifty closely printed pages deductions are drawn from the case histories in connection with every phase of the disease. I will mention a few of these. Of the 1500 cases he states that "840 were in August, September and October." "There were, under fifteen years of age, 231; between fifteen and twenty, 253; between twenty and thirty, 680; between thirty and forty, 227; between forty and fifty, 88; between fifty and sixty, 8; above sixty, 11; age not given, 1. Of the 1500 cases there were 43 with perforation of the intestine by ulceration. In the 1500 cases there occurred onset with chills in 334, headache in 1117, anorexia in 825, diarrhoea in 516, epistaxis in 323, abdominal pain in 443, constipation in 249, pain in right iliac fossa in 10. Of the 1500 cases treated 9.1 per cent. died." His discussion of typhoid is full of similar deductions, which are important in connection with every phase of the disease. In addition to his own cases he also refers to the statistics of other writers, covering in all probability more than 100,000 cases.

This has come to be the rule in medical writing. A man states his views, and he also states the actual facts in definite form, on which his views are based. When thousands of writers follow such a plan and when the reports are grouped for each different condition, treatment is placed on a more scientific basis. It is largely by the accumulation and comparison of such data that the real science of medicine has been developed.

In classifying and indexing many thousands of articles in our dental literature the writer found practically nothing of a similar nature. There is shown in our literature almost no effort to study the diseases and conditions which we treat by the tabulation and comparison of data; and it seems to me to be one of the greatest stumbling blocks to our progress. Most of our writings and discussions of papers before societies consist of opinions based on the observations of individuals. Of how much greater value would it be if each man who writes or discusses a paper could say that he had a written record of a definite number of such operations, with the results also recorded. The publication of such reports would enable one to gather statistics covering a large number of cases of any class and to make deductions which would be of positive value. Few meetings of dental societies occur in which we do not hear some one speak in favor of a certain method or filling material and cite as proof an isolated case of years' standing. Almost every method to dentistry has at one time or another been proven good, if we could accept such an argument.

We should have a system of record keeping by which we will be able to really know something of the results of our work, and of the various pathological processes which confront us. We should not only keep a record of the teeth we extract, but of why they needed to be extracted; what cause led to their loss. We should not only keep a record of pulps removed, but of why they were removed, of their condition when treatment was begun, of the treatment employed and the results. We should not only keep a record of the cases of pyorrhea which we treat, but also a record of the cause in each case, or in as many cases as it is possible to determine it, a record of the treatment employed, and the results, including a memorandum of teeth extracted, with dates. We should not only keep a record of our filling operations, but also of the apparent cause of the decay, whether to lack of care on the part of the patient, to imperfection of a previous dental operation, such as the leaving of a proximal filling without a proper contact, or to any other of a number of things that might be mentioned as frequent causes of decay. We might also enter something of our method of cavity preparation, whether or not extension for prevention was practiced, etc. And so it should be with every dental operation. We should be studying the cause, the pathology, the symptoms, and recording them, in order that we may eventually come to definite conclusions regarding many problems as yet unsolved.

If all that has been written on the treatment of the dental pulp could be put together in a single book, it would make a tremendously large volume, yet the most of it is of little real value. Many of the articles written twenty or more years ago might be reprinted today as new and "original communications," and no one would suspect their age. If one should read all of the articles, he would have at the end little upon which to base a definite line of facts. The profession has been wandering from one method of treatment to another without making much real progress. If, during the past twenty years, every man who has written an article on pulp treatment had stated exactly the number of cases he had seen, the methods of treatment followed, with the number of cases for each, and the result as noted in subsequent examinations, we should be able now to choose certain methods that would have been proven good, and discard others as unquestionably bad. Such statistics must be kept by a considerable number of men, and extend over a number of years before we can make proper comparisons.

There has not been developed, up to the present time, so far as I know, a system by which such information may be easily kept. It is manifestly impossible for a dentist to write out a case history of each operation. Whatever is kept must be in accordance with a well planned system.

which will provide for the recording of the essential points desired with the least possible expenditure of time. The plan should be so simple that most, if not all, of the record might be kept by the assistant, under direction from the dentist. I have during the past six or seven years tried several different plans, all of which were abandoned, after trials of from a few weeks to a year or more, on account of the time required to make the record and the difficulty of tabulating the information afterward. I have now in preparation a more simple plan which I hope will be more satisfactory. To state it in a few words, this plan is one in which a series of specially printed loose leaf ledger sheets is used, these being differently printed for each class of operation—one for gold fillings, one for inlays, one for crowns, etc. To record an operation almost no writing will be required; only the name of the patient and several check marks in columns under printed headings. All of the information desired for tabulation is arranged in the form of column headings. For example, on the sheet for gold fillings, there are several columns for the ages of the patients, each column representing a five or ten year period; a check mark is placed in the proper column, indicating the age of the patient. There are columns for the sex; columns for a check mark to indicate whether the operation is a new filling or a refilling; a number of columns for the causes of the failure of the previous filling and for the causes of the decay if a new cavity. I have not made sufficient progress with this plan to warrant a full description of it now. I make the above reference to it in the hope that others will attempt something along similar lines.

There is one other phase of this subject which should be mentioned; viz, the cultivation of the habit of observation. It is surprising how little one sees unless he has trained himself to be constantly on the alert. If one forms the habit of recording he will soon find himself more keen in observing. If it becomes the rule for a dentist to note his opinion of the causes of the various conditions that present, he will find that he makes more careful examinations, that he sees things which he had formerly overlooked, and he will have an added interest in his work; what is more important, it will necessarily result in an improvement of the quality of service.

A good test of one's power of observation and of his ability to make a record of what he sees is to take up almost any object, examine it carefully, then lay it aside and attempt to write a description of it. After the description is written, the object should again be examined, and the description corrected and supplemented. This is a splendid thing to do frequently as a matter of training.

I have mentioned the importance of keeping a record of the operations performed for each patient. I presume there are few dentists in practice today who do not keep records of some sort. Few men apparently realize the value of more complete and more accurate records than are generally kept. The record as ordinarily kept consists of a memorandum of the kind of operation, whether treatment, filling, inlay, crown, etc., with the location marked on a chart. Such a record, if carefully kept, is invaluable, both from the standpoint of service and of business, but the more of accurate detail that can be added, the more valuable the record becomes.

Most of the systems of record and bookkeeping have no provision for the keeping of even a fairly complete record. I know of no system, in which the record of the operation and the fee are entered on the same page or card, which permits of the keeping of what I would consider a good record. It seems to me essential that separable sheets or cards should be provided, one for the record, the other for the account. By such a plan, the account of an entire family may be kept on a single page if desired, without confusion of the records, but of more importance is the opportunity afforded for more complete entries in the record than can be made on the other plan. Everything that is done at each sitting should be recorded. If a pulp is removed and a treatment placed, both the removal of the pulp and the medicament sealed in the tooth should be noted. Each subsequent treatment should be entered, and finally the root filling mentioning the material used. Many dentists make no record of anything but the root filling in such cases. I have found the plan of keeping a careful record of each treatment of much value, particularly in cases in which the series of treatments was interrupted so that I could not remember what has been done and in cases in which trouble developed subsequently. A few years ago I made up a tabulated statement of all the cases since I began practice, in which I had removed dead pulps and it was an interesting study to note the variation in the number of treatments previous to root filling, and the variation in the elapsed time between treatments, also the results in many cases that had been subsequently examined.*

A large percentage of dentists enter practice with little or no knowledge of either record or bookkeeping, and, not realizing the importance of keeping accurate records, adopt systems which soon prove unsatisfactory. There are a good many difficulties in changing from one system to another, consequently many hesitate to make a change. Record and bookkeeping should be a part of the instruction of every dental school; in fact, the school which does not train its students in these important matters is not doing its duty. Students should be taught record keeping by requiring them to keep accurate records of the operations they perform. The school should adopt a good system and it should be the duty of the clinical instructors to see that the students understand and make proper use of it. Students so instructed are better qualified to select a good system when they begin practice, and they should have a fuller realization of the importance of keeping a proper record of their operations.

---

*Dental Review, Vol. XXI, 1907, p. 1127.

KEEPING A BUSINESS RECORD.

By Walter H. Ellis, D. D. S., Buffalo, N. Y.

THE PRACTICE of our profession involves a considerable remuneration in the satisfaction gained by ministering to suffering humanity, in good work well done, and in the sincere appreciation of our patients, but after all there is a certain monetary return that is a necessary adjunct to our work, and this return, be it what it may, must be so handled as to pay the necessary expenses of conducting the practice and to leave a balance on the right side of the ledger sufficient to meet the requirements of our daily life and leave competence for old age.

By nature of the work involved, professional men are more liable to neglect business methods than those of other callings. Conversation with men of business affairs, or a glance into their trade journals, shows this very readily. Naturally, much of the detail of mercantile affairs can be eliminated in our records, but the general principles of good business cannot be neglected.

The business part of our work is thought by many to be unimportant and unprofessional, but while it should not be overdone, a general idea of it is obviously very necessary and we must give earnest heed to it to be successful and best serve those dependent upon us for support.

It is my purpose simply to outline in a general way a few simple business methods that may be used with good results in the conduct of a practice. The amount of success that comes to a practitioner will determine to a great degree the real necessity of complex business methods, but there is none of us who could not use an increase and this is offered merely as a suggestion toward that end.

Consider yourself as a general manager, commissioned to do all the professional work and to make the institution pay good dividends. Conduct the office as an institution separate from any and all personal affairs. That is, have a separate bank account for the office, into which all money received is deposited and from which all bills are paid, thereby eliminating the confusion that comes from putting money received into the personal wallet, the bank account used for other affairs, etc. This also applies to paying office expenses. Always have them come from the same source, by checks from the business account. They make the best receipts and the check book stubs showing all expenditures, verify the ledger account.

If assistants are on regular salary their entries are easy. If on commission they might better keep separate ledgers (call them "memo accounts"), all items of which should be posted in the general ledger and other office books. Any minor deviations to accommodate a system to individual needs will naturally suggest themselves.

A day book is not absolutely essential, but a ledger is. Open a general loose-leaf ledger account, starting on debit side with balance on hand in bank (business account), putting down beneath it in separate items and in order, all money received during the month. The ledgers, day-book, etc., can all be kept under one cover if loose-leaf system is used.

All money expended should be paid by check and entered on the credit side. A petty cash account can be kept to save bothering with small items. An individual ledger account should also be kept for each debtor and creditor, the number of its page to be entered opposite its entry in the monthly ledger. The ledger of debtors may be divided into open, unfinished and closed accounts, the open accounts to include notations of the date and number of bills sent, which facilitate the collection methods.

The monthly ledger account should be balanced the last day of each month and carried forward to the first of next month. This will naturally correspond with the bank balance. A page of the ledger account shows at a glance the life history of the practice for that period. Its general footings compared with those of one or all of the others will give a good idea of the pulse and temperature of the business, which will naturally suggest proper treatment.

Every business, no matter whether conducted by an individual, partners, or corporation, is run as a separate institution, the officers or owners taking a regular return every month, the balance being expended in running expenses, renewing stock and equipment, covering general depreciation, building up a reserve for further expansion, etc.

By a study of the net proceeds for a few months a commensurate return to be taken from the practice can be determined, one that can be paid without injustice to the creditors, this amount to be withdrawn in weekly, bi-monthly, or monthly checks as desired and deposited in the personal account, preferably in another bank, from which all household and personal affairs are paid in the same business-like way. Or the same account may be used for all affairs, in which case the personal checks should be entered against you in the ledger and the aggregate in each month should not exceed the usual total. If it does, average up next month by withdrawing less.

In considering the cost of conducting practice, in order to determine the amount to be withdrawn for personal affairs, a fair amount should be charged to be expended in renewing equipment, buying improvements, etc. This allows for the purchase of supplies in quantities, the taking advantage of the very best cash discounts, the buying of goods of fluctuating value when the market is low, the paying of bills promptly, etc.

This regular income, whether large or moderate, permits a more business-like adjustment of personal affairs. On the other hand, a fluctuating income is rather annoying at times. Knowing what to count on, the expenditures can be properly gauged. The certain regular proportion of income which should be put aside in a separate saving account is also more apt to be made. This saving account, even if very moderate, invested conservatively, kept clear of all wild cat schemes, will grow so steadily as to be sufficient reserve for temporary disability and a competence for old age.

Good business judgment should be used in the conduct of the office. A business transaction to pay dividends will necessarily first pay the actual attendant expenses, anything over this is profit. But you must be sure just what that expense is. Estimate your overhead expenses, rent, heat, light, assistants, materials, etc., and find to a cent what it costs you to conduct business. But this is not all; you must also consider what it cost you for your professional education. The profit is the difference between these expenses and the fee—it is the royalty paid to the master mind that conceived the diagnosis and conducts the treatment. It will, in a measure, be gauged by general office tone and equipment, your personal appearance and manners, experience, and the public recognition of your ability. Don't overlook this item. By education, nerve and honest belief in the value of services rendered it can be considerably raised. You cannot make it too high. Dental fees as a rule are too low. In comparison with medical and legal fees they suffer considerably, although we do better in this respect than the clergy.

Other good business methods will naturally suggest themselves. An accurate record should be kept of all professional work, first putting a memo of it in symbols upon the appointment book or day-book for that purpose, and later transferring it to a loose leaf or card system, carefully indexed and subdivided into open and closed, etc., all entries to be made at completion of work or at close of day while fresh in mind.

Appointment cards with appropriate foot notes concerning broken appointments, etc., serve a good purpose. Notification cards stating date of last dental service and probable need of another examination are serviceable to send out to certain members of our clientele. Estimate forms with terms of payment are also good. All telegrams, letters, orders and receipts, in fact all business papers should be typewritten and their carbon copies filed away and properly indexed.

An accurate inventory giving date and value of equipment should be kept. It is invaluable in case of fire and also for estimate of capital invested.

Money should be collected promptly, letting your patients know you as a business, as well as a professional man, for every one is aware that it costs money to live and conduct a practice, and expenses must be met.

It goes without saying that it is good business to conserve and increase the efficiency of the machine that does the work. Our work is rather confining and subjects us to considerable nerve strain. Get a hobby and ride it, participate in good outside sports, golf, tennis, etc. Active interest in outside affairs will broaden our outlook to a great extent, the reading of good literature and the enjoyment of good music and art is a wonderful uplift. All these refine our sentiments and increase our philosophy.

FEES*

By J. R. Callahan, D. D. S., Cincinnati, Ohio

THE FEE or money received by the professional man for services rendered means success or failure, according to the standards of this present day and generation. At least this is the standard adopted for the purposes of this paper.

An eminent English authority says—"Success in an individual is the realization of some or nearly all the deep-seated desires for love, health, honor and power, whatever the subdivisions may be. It may be stated with fair completeness that the four desires mentioned constitute, when realized by the individual, singly or conjointly what is called 'success in life.' These four desires are fundamental. They are the essence of man."

Sir F. Treves, the great surgeon, in his rectorial address to the students of Aberdeen University declared that success in medicine did not depend upon money, social influence or luck. It was, Sir Frederick said, a common plea of the faint hearted that success depended mainly on luck.

"I do not believe in luck at all and the man who is content to wait for a stroke of good fortune will probably wait until he has a stroke of paralysis."

If one will analyze the good luck cases it will be found that success is founded, every time, upon preparation. It is possible they were prepared by an unconscious habit that grew up with them from boyhood.

I know a man who from early youth has been in the habit of estimating, in his own mind, the cost of everything he comes in contact with, and where possible, figuring profit and loss at current prices.

Is it any wonder that he is today worth millions? Yet his acquaintances speak of him as lucky. Not a bit of it. It was a life-long concentration upon the subject of profit and loss.

Without further enlargement or discussion we declare that "success is the crowning result of concentrated energy."

A close analysis of the career of a successful dentist will disclose to us a record of *well directed energy,* not luck.

In order to maintain physical and mental energy for a number of years, one should be possessed of a fair share of good health. Life of any kind without health is a serious handicap in the struggle for success. This is especially true of the dentist, whose very soul is on trial every day. His sympathy, patience, tact and endurance are put to the test every hour that he is in contact with his patient, and if he falls short in any of these elements of success, failure stares him in the face. To the dentist, then, physical condition is of the utmost importance.

Our chosen work calls for no physical exertion whatever. The more diligently we prosecute our sedentary and nerve-racking calling, the less physically fit do we become, depleting, day by day, whatever store of energy and health we may have possessed in the beginning. In proportion that our daily occupation fails to supply opportunities to maintain a healthy and vigorous physical condition, in that proportion it becomes our duty, to our patients, to ourselves and to our success that we employ every rational assistance in the maintenance of that condition that will supply the energy so necessary to our success.

---

*Read before the Columbus Dental Society, Oct. 25, 1910.

A man in poor health is not an attractive animal: he is liable to be cross, unsympathetic, nervous; his mind is not under control: he is exposed to every condition that operates against a large and lucrative practice.

Fatigue is a condition to be reckoned with in the race for success and is a far greater handicap to the dentist than is generally recognized.

Fatigue is a chemical process. At the end of the eighteenth century Lavoisier, in a series of chemical analysis, succeeded in demonstrating a fact of fundamental importance, namely, that muscular exertion increases the quantity of oxygen absorbed and of carbonic acid eliminated by man.

The lack of energy in the movements of a weary man depends upon the fact that the muscle during work produces substances which, little by little, interfere with contraction.

Helmholtz discovered that a muscle in repose contains only a small quantity of matter soluble in alcohol. Let 1 represent the quantity found. Upon taking an actual weight of muscle from a fatigued animal he found that there was a greater quantity of such matter, the amount being 1.3.

By this experiment one gets a glimpse of the changes which are produced in the muscles as the result of fatigue. Another discovery of importance is that of DuBois Raymond who found that the fatigue muscle is acid while the muscle in response is alkaline.

Whatever these discoveries mean it is certain that during work the muscle substance engenders waste products, dross, so to say, which is toxic.

To demonstrate that muscles accumulate products which interfere with contraction, Ranke made an aqueous extract of muscles which had been exercised, and having injected this into a fresh muscle, found that its power of exertion was diminished. After it was washed, however, its energy returned. The nervous system is the sole source of energy. All the organs of the body feel more or less any loss through the great activity of any organ. The exhaustion of energy is general and all the magazines of energy can be drained by the exaggeration of any activity, whatever the organism.

The conclusion of authorities is that there exists only one kind of fatigue, namely nervous fatigue. Therefore, muscular fatigue is really an exhaustion of the nervous system.

It has been shown that in great muscular effort or extreme fatigue cerebral anemia is produced, and that this anemia may diminish the power of vision, or interfere with any and all the mental or bodily activities. In a state of fatigue it is impossible to be attentive. It is for this reason that the dentist is a comparatively poor reader. After a hard day at the office it is a difficult matter to read and remember; therefore but little progress can be made.

To continue work at the office daily until one is so weary that it is impossible to be decent, or do decently, is a great mistake. It affects the dentist in two ways: It will ruin his health, at the same time drive people away from him. One is scarcely fit to go home to his family when fatigued. There is a vast difference between fatigue and exhaustion. While many a dentist does work to the point of exhaustion, still the larger number stop at some degree of fatigue sufficient to amount to overwork.

Mild, well selected and well regulated out-of-door exercise finds its widest field of usefulness in conditions of fatigue or other unhealthy conditions that so hamper the active dentist. Where the elimination of waste matter must be assisted, where nutrition is impaired or destroyed, muscles can be improved in size and tone, ligaments stretched and strengthened, the general circulation quickened and overloaded veins made to disgorge their blood, the digestive tract can be stimulated to more active habits, and overwrought nerve centers soothed and relieved of their hypersensibility and the conditions of fatigue and overstrain eliminated.

I have in this brief and disjointed manner endeavored to point out and emphasize conditions that I believe go far toward bringing failure to a large number of our profession.

If concentrated energy is the secret of success then the source of that energy must not only be conserved but cultivated. No sane dentist expects ever to become wealthy through the income derived from his individual practice. The question of fees, good fees or high fees is a relative proposition and will be controlled largely by the demand for the services of the individual dentist.

How did Dr. B. create such a demand? Why do so many desirable people flock to his office and wait their turn to secure his services and pay him better fees than they will pay Dr. A.?

If we will study the early life of Dr. B. it is probable that we will find that as a boy he was industrious, not afraid of work. Did not shirk responsibilities, stood fairly well in his classes and could hold his own in all the games. When he worked he did the best he knew how and did not quit until the job was finished. When he went to recitations he showed that he had given them earnest attention. In the games he was honorable and fair, at the same time he exerted himself to beat the *other fellow every time.*

He was developing *energy* and *determination* from the start. It is possible, even probable, that Dr. B. had a pretty hard time to get through college. Had to work and borrow to get part or all of the money to pay his expenses.

When he finally secures a modest office and a patient, now and then, he studies his cases well and throws his whole soul into every operation, he consciously or unconsciously gives serious thought to the whole situation and determines his line of action. And we would *expect* the boy we have so briefly described, when he reaches maturity, instinctively to fix his attention upon the highest standard within his mental horizon.

He not only reads but studies the professional journals. He attends society meetings. Listens and observes. Goes home more than ever determined to excel. Studies more and more, not only dental literature, but medical, surgical and general literature. Haunts the public libraries until he begins to collect one of his own.

About this time he will write a paper for his local or state society. He thereby makes a most important step toward success: good fees. Not that having one's name appear on a program and appearing before society is going to bring full practice and good fees—not at all. The members of that society are not going to exert themselves to send him patients. It is the labor that he has put on that paper that is the great benefit. To have an idea is one thing; to write or say it intelligently is quite another thing and is a long step toward success.

People who pay good fees want their dentists not only to give them good service but to tell them why. Dr. B. by being able to make a clean-cut exposition of cause and effect as the cases come to him, is creating an atmosphere about his practice that in very large letters spells success.

As success develops he begins to feel the dignity of his calling: the feeling of self respect develops. A man who has no *self* respect will have little or no respect for others. A man who has no respect for *others* cannot succeed in professional life.

A self respecting dentist will never admit that his services are not worth at least as much as the services of his neighbor dentist. He will endeavor to look and act like a gentleman, avoiding at all times the air and dress of a sport, seeking by close reading of good books, biographies, essays, etc., to make himself acceptable or interesting among cultured people. He will not permit himself to become associated with a church unless he is a pious man. He will not sign himself M. D. even though he has a medical diploma, unless his knowledge of medicine is sufficient to prevent his being laughed at by medical men. He will not preach prohibition then step into the laboratory and take a drink all-alone.

To be known as a cheap dentist is fatal. If by word or action you have given your clientele to understand that you are as cheap as anybody, you, that moment, forfeit the right to good fees, for by good fees, we mean a fee that is at least a little higher than that of any of your confreres. On suitable or proper occasions *state* to the patient as modestly as possible that it is your desire and effort at all times to charge more than other dentists in your community.

The patient will always come back at you with the remark that you must think that your services are better than those of other dentists. A quiet rejoiner to the effect that the patient will have to decide that question, will place you squarely on your merit and there should be no argument about it. You have declared to the community your platform and you must make your services up to the standard you have declared. People of worth admire courage when backed up by good results; even God *hates* a coward.

Do not work for people who rouse the worst side of your character; who are disagreeable and quarrelsome. Do not lose your temper, but say to them, in a quiet earnest way: "You and I are not going to get on nicely together. I seem to annoy you, so I believe we had better agree between ourselves that it will be much better for both of us if you will go to some other dentist. Here is a list of a few of the most reliable dentists in town. I can recommend them. I believe you will be pleased and safe in their hands." Be gentle but firm. You are simply discharging them before they discharge you. Be first.

After having a hard time collecting a bill, always sign the receipt as follows:—

Received payment: Trusting this will end our business relations, I am yours truly, etc.

Never let a patient discharge you if you can avoid it. Always be careful to maintain your own self respect by being as respectful as the case will permit, to all concerned. Do not lower your dignity or wear your life away working over children for a smaller fee than the same service commands from an adult.

For every service, however trivial it may seem to you, dignify your services by charging something for it. People sneer at you for free service.

Root canal treatment is perhaps one of the most difficult operations in our work as well as one of the most important. Notwithstanding its importance, I think I am safe in saying it is the most neglected. Many cases are slighted on account of difficulties that present themselves. But the principal reason for this neglect is the fact that a large majority of the dentists of this country charge little or nothing for this most scientific and exacting service that they render.

When a dentist tells me that he charges almost nothing for this kind of treatment something whispers to me, and the patient hears the same whisper, that their services in this direction are so poor that it hurts their consciences to even think of asking a fee.

People do not want you to work for nothing: they are always suspicious of bargains and if they do not appreciate what you are trying to do in these cases it is your own personal fault.

It is your business to show them what these cases mean. If you can't do it you do not deserve a good fee, and when that patient gets into the hands of a man who goes at it as if the patient's life depended upon the outcome, who spends hours on the case, if necessary, and succeeds in getting the root canal into a healthy condition and then charges a respectable fee for his services, then I say, Mr. Cheap Dentist, that patient will put *you* down for a short weight and of poor quality. And he will not be far from a proper diagnosis.

The alloy filling is another cheap spot in our practice. Yet the alloy filling will show a larger percent of profit yearly, if properly handled; and at the same time they will ruin any practice finally if inserted in any but the most thorough manner.

What is a good fee for an alloy filling? I would answer: charge and collect 25 to 50% more per filling than any dentist in your neighborhood charges. That would be a good fee provided you can make the advance *good.*

A fair fee for any and every kind of treatment is expected by a patient worth having. In fact they begin at once to lose respect for your services when you say by your action: that it is not worth anything, or worth so little that the patient holds you in contempt, or pity.

Naturally if you place such small value upon yourself, society will take you at your own estimate and seek one who has been better able to hold higher respect in the community.

Another fee-killing custom that prevails among dentists is the pig-headed habit of doing everything with his own hands: who becomes fidgety and nervous whenever anything is done in the office without his personal supervision. Every modern business is so organized that most things shall be done by assistants. The routine work about the office should be left in the hands of people employed for the purpose, so that the head of the office may have sufficient leisure and quietude of mind to think every day, then think some more, and be fresh and full of energy for the actual work that *counts.*

REFERENCES:

Adama, *Principles of Pathology.*
A. Mosso, *Fatigue.*
J. Lauder Brunton, *Disorders of Digestion.*
McKenzie, *Exercise in Education and Medicine.*
Emil Reich, *Success in Life.*

> Let your own discretion be your tutor; suit the action to the word, the word to the action.—*Shakespeare*

POINTS TO BE OBSERVED IN PRACTICE BUILDING*

By Earl H. Westenhaver, D. D. S., Enid, Okla.

THE subject of practice building has been lately attracting more attention from members of our profession that it ever has before, and I, myself, have been giving this subject serious thought and thinking how important it is for us to look not only upon the professional side of dentistry, but also give the business side plenty of space in our magazines.

Now to start with we have three kinds of people, namely, The Wills, The Won'ts and The Can'ts. The Wills are those people who accomplish everything. The Won'ts are that class who oppose everything, and The Can'ts are those who never do anything. Now, in dentistry this applies admirably, for we meet men in our profession who say I can do this and I can do that, and they do it; why do they do it? Because they are classed with the Wills and have confidence in themselves. We hear men say: I can't get $10.00 for a crown because my competitor charges only five. These men have a lack of confidence in themselves or possibly they have been putting on the $5.00 variety and their services are not worth more than $5.00. Why are their services not worth more? Simply this:

If you put a crown on for $10.00, don't you feel like being more particular that you give your patient the best that is in you, than you do if you simply meet your competitor? Most certainly you do.

Now for the benefit of some of the younger practitioners or those who have just completed the prescribed curriculum in some dental college, I am going to consider a few of the fundamental things which will enable you to command the highest fees for your services and I should not be at all surprised if it wouldn't be a good thing for some of the OLDER practitioners to think about.

The first thing to consider is choosing a location. Now, my advice along this line would be to choose a place that you feel you can be satisfied to make your home. You need not look for a place where you have no competition, because if you find it you possibly won't do any business.

The next is office rooms, equipment, etc. In equipping and furnishing office rooms, select for the reception room good substantial furniture, so that it will not look shabby in a few months and keep the rooms neat and clean, also have some late magazines on the table. I have visited a great many offices in the past year, and you would be surprised to see the shape you find some of them in, magazines on the table with the backs torn off, and old enough to most of us that we would imagine we had a book on ancient history if we should read some of them. I was reading some time ago about a lady in New York who had been to a doctor's office and had noted some late fashions in one of last month's magazines, and she was telling her friend about it. Now, the editor said he did not like to dispute a lady, but whoever heard of a last month's magazine in a doctor's office. I find it a good thing to keep some of the late fashion books on the table because nothing will help a woman to pass the time better than to look over these and plan for that new dress.

---

*Read before the Oklahoma State Dental Association at Tulsa, Okla., June 2-4, 1910.

The operating room should contain the best appliances the dentist can afford. Always keep this room looking neat and clean, keep the instruments put away in your cabinet for use when you need them, but do not allow the bracket table to pile up so full of them that you cannot find what you are looking for. Why, I have gone into offices and seen a forcep lying here or there with an old bloody tooth still between its beaks, just as it was when the tooth was extracted. Now this must be a pleasing sight for a patient.

Possibly the towels used have been used for a week without laundering. I always place a clean towel on the head-rest just before the patient is seated, then another clean one to protect his clothing. These are little things, but you would be surprised to know how your patients note them.

The next thing I want to take up is personal appearance. Now, then, what about that hair, do you keep it properly trimmed? And that beard, too, or do you shave once or twice a week and have your hair trimmed semiannually? I have seen some men in our profession who looked as though they were doing that way. What about your linen? Are those cuffs clean or have they plaster of Paris, blood splotches or other filth on them? And that collar; are the edges rough or corners broken, so it has more the appearance of a hack saw than a nice pure white collar? And don't overlook that neck tie, and those trousers. Have they been pressed in the last six months? Just step in front of the mirror and behold yourself; see if there is room for improvement along this line. What about those shoes? Have they ever seen a shine or have they some of last year's mud and dirt still sticking on them? Another important thing which I was about to overlook is the nails. How much soil do you carry around with you under those nails when it should be out in the garden or corn field where it can produce something?

As I am reading this paper just step back to your office and view it and think of the ways you can improve which will cost you very little, and will yield you well in return. Now as we have the foundation laid for good fees, let us start. I wonder what my services are worth? A man is what he makes himself. There is a vast difference in writing I big and the possession of the BIG I. It is possible for everyone to write I large in his own way. He may not be able to soar to sublime heights, but he certainly can adjust his wings to the measure of his flight. The lark, though not one hundredth part the size of the eagle, can rival him in his skyward journey and be as great in its own place. It requires nerve and determination, backed by strong will power, to succeed. It is necessary to fortify one's self with what Emerson was pleased to call "incessant affirmaties."

There is a tremendous force in vigorous affirmation. Strength is attained by affirmation to be strong, a determination to reach a desired end. Without a robust belief in your ability to accomplish you never will accomplish. You must believe in yourself and not depend on others to drag you up to the heights of success. Prosperity has nothing in common with a negative mind. Fear makes paupers, it dominates them to such an extent that they do not venture out of their narrow limitations into the broad plane of manly endeavors. You must demand the best or it will not come out. You must believe in your bigness, you must stir up the innermost depths to discover all that is best in you.

If you are conscientious in your work you can get just what it is worth; your patients will pay you a good fee if you give them good services in return, and you will find that the greatest battle will be with yourself and not with the patients, but you can't win this battle until you honestly believe your services are worth what you ask for them. How can you expect the public to value your services very highly when you yourself don't do it. It is a painful and a shameful fact to note that very few dentists are financially fixed to enjoy life in their older days, but just have to keep bent over that chair until their last day. Another fact is the appreciation of a dollar when you get it. I think as a rule dentists disregard the value of a dollar more than any profession or organization I can think of.

It is the desire of all ambitious people to be successful and what does success mean. Does it mean the accumulation and hoarding of so many dollars, or the power over so many men? A man might be successful so far as his professional services are concerned and not successful in obtaining ample fees for them, that he may enjoy some of the luxuries of the world. Success means a thousand and one things, but more than all, and including all it means, it means the attainment of a desired end. We as professional men want our work to be successful and we should be successful in obtaining good fees for it. Into every man's life there comes a time when things look blue, when he doubts his ability, when he wonders if it is worth all the effort and in fact he wishes he could slip out of it all. Now, there is the test. It is such a shame that anyone should go under or abate the effort. In this old world of ours we can see very few reasons for any of the fundamentals, and why one man should receive a gentle push to help and another a deadening blow to hinder, is not clear, but over and above it all is a message of good cheer.

Meet your test—stick, though all the devils in hades whisper, "quit;" fight even if you feel yourself licked; "plug," even if it seems too late, and you will drag over the top of the hill to success. Bruised in spirit, maybe, hurt and sore, worn out, but *man*—you've succeeded. The biggest word in the whole language.

When you have succeeded in one thing then you are ready to go on to the next and who knows—do you or do I—how big the things are on the other side? Skepticism, cynicism and pessimism. The trinity of helplessness. Can men who do things be skeptical? No. Or cynical? No. Can anything be done with a pessimistic spirit? No. There is no room for argument along this line. All about you, you see men beaten, giving up before the game was finished; wasted the whole thing for the want of a little sticking. So now, old man, if you are blue, or down and almost out—take this as a personal slap on the back, a personal cheer, this is all as true of you as it is of the rest of us. What you are meeting others have met, some have won and others have gone down, and the only difference was that the men who won were the men who kept on and fought until every drop of energy was gone and then found victory on the other side. You can win. You can succeed. Don't you believe anything that says differently. Fight and keep on fighting and you will win. Recharge your mind with this and keep it before you at all times. Break up your model of "DOUBT" and make it over into a "BILLIKEN." But coming back a little nearer to our subject again: There is so much to say along this line that I am apt to get side-tracked before I know it. When you have a patient present him- or herself for a piece of dental work, don't be afraid to let him know that you are the dentist; the great trouble is that the dentist is afraid of his patients, and when they want to know what it will cost them, don't go stumbling around the bush, and don't put in half a day explaining the cost of the material for an amalgam filling when that is none of their business. First, examine the mouth carefully and then look your patient straight in the eye and without hesitating tell him that it is worth so much and be sure that you add a little extra because you will need it. I never tell a patient that a piece of work may be less than I estimate it; that is bad policy. I always say it may run above what I told you, that it is a hard thing to tell just exactly what a piece of work will be worth, because you can't tell just how long it will take to do it, but if they insist on me putting a definite price on the work I always add a little so I feel on the safe side. I have people tell me that I am a thief and robber and that I am crazy, but that just does me good. I don't care if they go out and tell some of their friends how high-priced I am. They have just that much more desire for me to do the work if they feel it is harder to get. Don't people respect a man a great deal more who commands good fees than they do the cheap guy, who finally goes into some other business, or who is just making a living and not a very good one at that? Certainly they do.

Another important thing is to make patients be prompt in their appointments. I have adopted the plan of charging for time when they break appointments. I had several cards printed to read something like this:

NOTICE—Patients unable to keep appointments will be charged for one hour's time unless due notice is given to that effect in advance.

You can explain to them that when you give them a certain time that you expect them to be there because that time is reserved for them and that they not only cause you a loss of money, but they inconvenience someone else by not being prompt.

Another thing I always do is to impress upon the patient's mind, in the strongest possible manner, the necessity of taking care of the dental work when they have it done, that it is like anything else when put in use, subject to wear, and that the better care they take of the work the longer it will last them. I was reading in some book a short time ago that there were only 80% of the dentists in the world who had a credit, and that there were, taking the population of the world as a whole, only 7% of the people who are dishonest. Now, what does that mean? When only 80% of the dentists have credit, does it mean that they are dishonest? No, it does not; it simply means that they are not getting paid enough for their services to enable them to meet their obligations promptly. Their intentions are good, but their professional fees are poor.

Why, did you ever stop to think that in most all lines of business when the once active business man begins to approach the horizon of life that he has in his active days laid up a competence sufficient to keep himself and his family? Did you ever stop to think how many dentists do this? We not only owe to ourselves a just competence, but we owe it to those depending upon us, and now, right in the prime of life, let's commence to look after this part of it, because soon will our hair begin to turn and we will have found ourselves past the best part of our life.

Now, then, do you want to be known as a cheap dentist or a high-priced dentist? The cheap man is the one who works till his last days of existence, merely making a living. Wouldn't you rather put one crown on for $10.00 than two for $10.00? I know that I would.

Why, gentlemen, we are simply throwing ourselves away at such prices as the dental profession has been getting, and now, to sum up, let's make new resolutions and stick by them, let's be known as the ten-dollar man instead of the five-dollar man, and let's be classed with the Wills and not the Won'ts or the Can'ts.

And just as sure as you say I will get better fees for my services, just that sure you will get them. Have courage and confidence, do your next piece of work a little better than the last piece and get paid better for it, and I am sure we can raise the fees of dentistry to the place they belong.

And now when you leave this meeting and go back to your various offices, go with a big heart full of courage and assurance that you will win, and keep at it, keep your spirit uplifted and some day we'll all shake hands together at the goal of Success.

INFLUENCE AND HOW TO GET IT.

By C. R. Hambly, D. D. S., Bradford, Pa.

A DENTIST'S financial success depends largely upon his friends and their influence. His professional reputation is largely the result of the opinion of his professional brethren. A practice may be built wholly upon the influence of his friends without the advantage of a good reputation for superior ability among the members of the profession. It may be built upon the reputation of the practitioner among his fellows, but the practice is of slower growth; decidedly so, so decided, in fact, that the instances are few in which it has been done.

Some dentists do not possess the power or tact of securing the influence of their clients in their behalf, or else fail to realize to what an extent the growth of a practice depends on the influence wielded by satisfied patrons.

First of all, let us speak of the influence of a woman. A dental practice is composed mostly of women. Woman is the active partner of the home, and the silent partner of the office. Every married man, and every brother of a married sister, and every fellow who goes with some other fellow's sister, ought to know that a woman has an influence over man that he has never measured, because he does not know how to measure it, and because the woman would not permit him to measure it if he did.

Man is a busy being; he thinks he is, whether he is or not. He is nervous, and doesn't have time for this and that, doesn't know how to keep up his wardrobe or his office. His office is cluttered up. Half the time he doesn't know that his office carpet is shabby. The chances are that it will take his wife, or a nail to tell him that the soles on his boots are worn through, or that the weight of his trousers hangs on half the regulation number of buttons. The average man doesn't know about those things that he thinks he knows about.

Upon the pocketless dress of woman hang the keys of trade. The influence of woman can either build a dental practice or wreck it. If women like a man as a dentist they are unstinted in his praise. If they dislike him they are just as quick to say so. The man who, early in practice, sees the policy of winning the favor of women, is the man who will get to the front. The influence of one woman is worth that of two men. It makes no difference whether she is married or single. If she is married she has a husband over whom she wields an influence, and she will send him to her dentist to have his teeth put in order. She will send her children to him, and she will send her sister or her brother. She will talk him up until you would think she had a special interest in that particular dentist's welfare. She will tell how careful he is, what beautiful work he does, and if she compares him to other dentists the comparison is always favorable to him.

Treat lady patients with every consideration which it is possible for a man to show a woman. Perhaps you think you do this. There may be room for improvement. Never, under any circumstances, discuss another patient, nor be drawn into any utterance uncomplimentary to other ladies. Be a good listener, and a poor talker. Always be gracious in your demeanor toward them. Let your personal appearance and cleanliness be without fault. In all that relates to the instruction of patients, see to it that your lady patients are not neglected. Try to make a favorite of every one of them. The influence of physicians is in many places a powerful factor in the building of a dental practice. A good word spoken by a physician in behalf of a dentist is always helpful. Friendly relations should at all times exist between the members of the medical and dental professions. To secure the influence of physicians, mail them such articles or reprints of articles as may have appeared under your name in any of the journals of your profession. This serves to them as evidence of your qualifications for practice. Many little professional favors can be shown to physicians or to the members of their immediate family. For instance, when the wife or children of a physician apply for dental service, the work should be done promptly and in the best manner; and when the bill is sent in, it should be made as low as possible. When the work does not demand the use of the precious metals, it is proper not to send in a bill at all. A most important point is to see that the physician receives all of the published articles of the dentist which show him to be a superior dentist.

Druggists, especially in the smaller towns and cities, are exceedingly helpful. During the changeable weather of fall and spring a great deal of toothache medicine is sold by them; and afterward they tell the person that if he would consult a dentist, Dr. So-and-So is the man. It is well, therefore, to get on friendly terms with a druggist in the neighborhood. In the course of a year a great many dollars can be credited to this one source. When giving prescriptions to patients it is proper to indicate that you would prefer they should go to your druggist. The favor of attorneys can be secured by sending to them such of your literary efforts as have an interest to members of the legal fraternity. This is professional, because it is something of mutual interest to professional men.

We do not believe in making any special effort to secure the influence of ministers. If it is given by the ministers, accept it, but make no effort to gain it. The dentist who curries favor with a minister with a view to securing his influence, seems to us to make a sort of commercial use of the church and its representative.

It is well to show such favors as you can to reporters, and to other persons connected with the newspaper business. The day may come when their friendships may be of great benefit to you.

But again let us say, "Don't forget the women." Don't forget the powerful influence they wield in the home circle and in society. Don't forget that there is no better advertisement in the world for a dentist than that the wives of the most prominent men in the town are seen in his office. Other people who happen in take note of this, and it soon becomes known in the community which dentist is the favorite with the class of people who want the best and are willing to pay for it.

People take a pride in patronizing a dentist whose office is frequented by the representative citizens. They take a pride in knowing that their dentist is *the* dentist.

THE BUSINESS SIDE OF DENTISTRY.*

By W. H. Stacy, D. D. S., Covington, Ky.

THE time would seem ripe for the consideration of the subject of this paper for many reasons, some of which I will mention. To begin with there *is* a business side to dentistry, no matter how much we would wish to evade the fact.

Although we have consecrated our lives to the care of people's mouths, to teach *them* how best to care for them, to replace lost tooth tissue, to replace teeth lost through disease or accident, and in general to preserve or restore the mouth to its normal function, we as dentists must live by the results of our labors, and "the laborer is worthy of his hire."

The lack of uniformity in fees charged for dental services would constitute a good cause for such a discussion with at least some degree of frequency. The average dentist does not receive sufficient remuneration for his services to justify him for the outlay of time, money and energy expended to prepare him for his work, and to enable him to meet the demands society makes upon him as a professional man.

The public expects a dentist to be well dressed, to live in a good neighborhood and to contribute something toward religious and charitable causes.

They also expect him to be a man of some culture, which requires time and money.

They expect his family to make a good appearance, to participate in the various activities of the church and society, and to be educated.

With the increased cost of living, including house rent, food and clothing, the dentist surely has a hard time meeting these demands, to say nothing about laying by a little for old age. More than that, the office equipment of a dentist is becoming more elaborate and expensive year by year.

Although office and living expenses have greatly increased in the last ten years, the dentist's fees have not increased, at least his income has not.

Let us see if we can find some of the reasons for this condition. Is it because there are too many dentists? I think not, provided every one puts his very best effort into each operation.

I am afraid our timidity, born when we first began practice, has never entirely left us, that is, many of us.

---

*Read before the Odontological Society of Hamilton County, 1910.

When a patient presents for treatment, do we not often perform operations that our better judgment would tell us were inadequate to restore the tooth, or the mouth to its proper function, through fear that the patient will be unwilling to pay the fee that a thorough operation would demand. Until dentists insist on doing their work thoroughly, and demand fees commensurate with such work, they will continue to drag along hardly able to meet the demands upon them, and the public will continue to place a low value upon their services.

If in our daily work we could forget that we had any competitors, and indeed we should have none except so far as superior service is concerned, it seems to me we would feel freer in dealing with our patients, and we would have the confidence to do just what we thought was needed, and the courage to ask the right fee for our services.

Oh! that fearful hobgoblin, "the other fellow will get the patient if you don't watch out," that is, if you fail to make your fee reasonable, and that means low.

The real fact is that the other dentist will get the patient if you don't make good in your work.

The public does not know the proper value of our services because we have not taught it. Another matter that calls for reform is the habit of giving credit to patients without proper assurance of settlement. This is just another exhibition of our timidity in requiring as good evidence of ability and willingness to pay, as the person would have to give the dry goods or shoe merchant.

What stranger could go to Shillito or Mabley & Carew and obtain credit for ten, twenty or perhaps fifty dollars without references that would satisfy those merchants that the account would be paid promptly?

Then, accounts should be rendered monthly, and if not paid, the statement should be repeated except for good cause. It has been said that short settlements make long friends, and it is just as true of dental bills as of any other.

Another practice where the dentist fails to collect what is due him is in neglecting to charge for his time in examinations, and in the treatment of teeth: as at other times he is afraid his fees will drive his patients away.

Would it not be better for the dentist to charge at the rate of say $5.00 per hour for all his time whether filling a tooth, or treating the same; or for examination of a mouth, as well as for mounting a crown, than to charge $10.00 per hour for the exact time spent in filling or crowning or in doing the work for a lump fee? When it comes to bridgework it seems to be a common practice to charge so much per tooth, regardless of how much or how little the teeth to be used as abutments must be treated. The same obtains with regard to the mounting of porcelain and gold crowns.

In the making of artificial teeth it seems to be quite a common custom to make no charge for extracting where that becomes necessary. Why should a dentist perform any operation without charge? Another place where dentists lose, is through broken appointments and tardiness. When a patient engages a certain time with his dentist there is a contract implied that should be as sacredly kept as a promise to pay a sum of money at a given time. Another thing is this. We do not see our patients often enough. No one should fail to visit his dentist at least once a year, and most of them every six months, some of them every three months. Why do they not? Because we have not sufficiently impressed them with the necessity of doing so. Patients come to us with an accumulation of work and want to know how much it will cost to put their mouths in good order. When we come to estimate the probable cost we again are seized with stage fright and estimate too low.

At another time a patient presents for relief from an aching tooth; we persuade him to have the tooth treated and filled, but fail to inform him that he is in need of other dental services.

The opportunities where we might serve the people well, and to our profit, are many, of which I have mentioned only a few. It would look as though we do not measure up to our possibilities either in our service to the public or profit to ourselves.

I do not believe there is a dentist of fair ability, and whose character and address are what they should be, who has not a clientele that properly managed would enable him to live reasonably well, and lay by sufficient to take care of him and his in his declining years. One man cannot do much in a community alone toward the improvement of these conditions, although he can do something. Five can do much more, but if the whole profession could be aroused to an honest purpose to serve the people faithfully and well, and demand in a dignified way prompt and adequate remuneration for their services, all would do well.

Some of the dental journals have taken up the discussion of this subject and although I do not indorse all that has been written on the subject, I am glad that it is receiving consideration.

I would like to see this subject discussed once a year, lest we forget.

In closing, I wish to say that while I feel that this paper is a very crude one, yet I hope that some thoughts have been given expression, that others may elaborate upon to our profit.

> You ought to choose both physician and friend—not the most agreeable, but the most useful—*Epictetus*

SOME USES OF THE CORE IN DENTAL THERAPEUTICS*

By Otto E. Inglis, D. D. S., Philadelphia, Pa.

Professor of Dental Pathology and Therapeutics in the Philadelphia Dental College

BY THE USE of a core in this connection is meant the use of some substance temporarily used in a part of a cavity for the purpose of enabling another material to be formed over it after which it may be withdrawn, if desired, leaving a hollow or vacant space which shall act as a secure receptacle for medicaments or enable the treatment of root canals to be more readily conducted without the interference interposed by the gum tissue, saliva, etc. The vast majority of treatments may be conducted on the plan ordinarily accepted of placing the medicament first and over this flowing a quick setting cement or over it packing temporary stopping either in a semi-softened or totally softened state, or at times even a temporary amalgam may be used. The one great difficulty I have experienced in such use of medicament coverings has been that there is great liability of a leak occurring because of pressure of the covering material upon the moistened pellet carrying the medicament. Even when microscopic this may have the twofold result of permitting escape of drugs which it is desired should be confined, as, for example, formaldehyde, and of permitting ingress of infection which it is desired to exclude. If instead of this the covering can be placed while all parts are absolutely dry and the medicament be afterward placed, then such danger of ingress and egress is absolutely avoided and the prolonged and effective use of otherwise evanescent medicaments is assured. Not only this, but dangers such as may result from the leakage of arsenic, the fear of which I believe to have been a strong reason for the advocacy of abandonment of its use, may be absolutely avoided.

With the further preamble that there is no insistence upon the methods about to be described except in the class of cases indicated, I shall proceed to their description.

1. For the purpose of securely sealing medicaments in reasonably effective or safe quantities against the pulpal wall of a cavity, first dry the cavity and then place upon the pulpal wall a flat pellet of spunk so arranged that there shall be a liberal margin of cavity periphery upon all sides of it to avoid its inclusion in the covering at such points. After this flow quick setting adhesive cement over it and the cavity walls, or pack temporary stopping in softened pellets, first against the cervical margin, then against the buccal and lingual walls; the cervical portion may be allowed to rest against the adjoining tooth as a support to it and may be utilized to pack back the gum margin.

If great adhesion be desired the temporary stopping may be made very soft and troweled against the cavity walls with a broad instrument, much as one would use a cement. If this is done upon the buccal and lingual walls a burnisher may be used to complete the adaptation to the cervical wall. In a third method the equivalent of Flagg's facing amalgam may be used, Silver 40, Tin 55, Zinc 5 parts, plus sufficient Mercury to make a plastic mass. Whichever method is used there need be no attempt made to build the material to occlusal contour, as it is intended for temporary use only. After placement of the covering in the manner described, an excavator is to be used to scoop out any material that may have covered the spunk core and when this is reached it should be picked out with just enough care to avoid displacing the covering material. This leaves a space under the covering of a size corresponding to the amount of spunk used and an opening in the covering leading to it, which opening should be slightly countersunk outwardly in the case of cement having been used. Into the space against the pulpal wall the medicament, let us say arsenic, if you will, is placed, a pellet of cotton containing, say eugenol and menthol for the volatile antiseptic effects of these two drugs, should be wrung almost dry by pressing it upon a bit of cottonoid or a napkin and then placed over it. The orifice of the covering is then thoroughly dried and a final portion of covering material applied. By this cotton pellet not only is a sedative applicable but its semi-dry state enables it to absorb any excess of arsenical paste. When sedatives alone are used, larger pellets of cotton or spunk may be thus confined than would be the case with the after placed covering and if the covering be made thick and the orifice thus be made deep, pellets very wet with medicament may be safely and easily sealed in. In some cases the sedative may be used for a time and the same covering be employed later for the arsenic. At the conclusion of the period of sedation or devitalization or, if you prefer, of nervocidin anæsthesia, the covering may be removed at the sealed orifice. The conditions are then ascertained and then the covering material may be wholly or in part removed for the continuance of the necessary operations. The partial removal, leaving some of the covering at the cervical margin, often enables treatment to be conducted under a napkin without ingress of fluid and without troublesome replacement of temporary covering material at the part most difficult to maintain in a dry condition. When all treatment has been brought to a successful conclusion, all the temporary covering is to be removed and the further cavity work conducted.

---

*Read before the Northern Ohio Dental Society, June, 1910.

2. For the secure sealing of canal medicaments in effective quantity, the preceding method may be employed using temporary material for the covering after placing the spunk in the pulp cavity. This enables placement of such medicaments as formaldehyde solutions without undue drying of the cotton pellet to prevent leakage, as would be necessary if the after covering were used.

A special adaptation of the core method may include the use of a permanent filling as a covering for the canal dressing. Let us suppose that a third lower molar is under consideration: the cavity, a buccal one, with its cervix beneath the gum when the cavity is excavated; the pulp putrescent. Prepare the cavity with reference to canal access and filling form, with dovetails at the disto-bucco-cervical and mesio-bucco-cervical angles sufficient for retention of the cervicot-buccal portion of a filling. Open the pulp cavity and locate and form with a bud bur the mouth of each canal. Future access having thus been provided for, sterilize the cavity and, if necessary, pack the gum forcibly for fifteen or twenty minutes and, if necessary, cauterize the gum to prevent hemorrhage or leakage. Mix permanent quick-setting, non-shrinking amalgam. Napkin the mouth, dry the cavity, place several pieces of spunk in the bulb of the pulp cavity and quickly compress amalgam into the cervical portion of the cavity with spunk. It may override the spunk in the pulp cavity, if necessary, will push away and probably override the gum. When compressed and hardened all that is possible, allow it to set. Then carefully trim the amalgam level with the buccal margin of the cavity and scrape away the portion overlying the spunk. Carefully lift out the several pieces, which is more safely done that if one piece be used. Trikresol and formalin on cotton is now placed in the pulp cavity, the margin of the tap is dried and quick setting adhesive cement, of which calxine is an example, is dropped into the orifice. If for any reason it be desirable to place the treatment under control of the patient, hot temporary stopping may be used instead. At a convenient and subsequent sitting, the clamp and dam may be placed and the canal freely opened under the best conditions obtainable. In a given case, in which a large cavity existed upon the distal side of a left upper second molar with a large filling upon the mesial side, the remaining sound central tooth tissue could not be dovetailed nor the cervical margin squared without greatly weakening the integrity of the tooth structure. The rounded cervical wall offered little retention for the filling yet ran slightly under the gum margin. The pulp was putrescent and there was but a small pulp cavity. The occlusal margin was made slightly retentive with a wheel bur and a row of pits was drilled with a number one round bur along the cervical wall to the depth of the head of the bur and each made slightly retentive. Spunk was placed in the pulp cavity and permanent amalgam was built into the entire cavity and contoured approximally to about half way to the occlusal surface. A broad tap was sunk through the amalgam to the spunk and was funnelled out widely so that the amalgam at the approximal contact was but an edge. This gave free access to the canals and a generous space in which to seal an application of trikresol and formalin and through which to subsequently open the canals under the dam, if necessary.

In all such cases the amalgam is allowed to remain and is subsequently scratched to a clean, bright surface and dovetailed to allow a chemical union of fresh amalgam through the process named by Flagg—"Cold-soldering." The amalgam last added may be made to enter a pulp cavity dovetailed for anchorage, if such a procedure be desirable.

3. In a third class of cases easy future access to canals becomes desirable because of probable or positive curvature of roots rendering canal manipulation difficult and compelling the use of antiseptic root canal fillings as the best means of avoiding a septic condition of the canals.

The condition of the crown may permit a large filling, which however should have some anchorage beyond that offered by the cavity walls. In such cases the pulp cavity may be made as large as safety will permit and be given a dovetail form. After canal filling a suitable cone of temporary stopping should be formed and mounted by its apex upon a canal plugger, its base should then be heated and it should be applied to the base of the pulp cavity in such a manner as to cover the canal openings. The cone is then manipulated with instruments so as to leave a fair space between it and the dovetailed walls into which the amalgam may be packed. The amalgam filling is thus retained and at the same time if indications demand it, the filling may be penetrated, the temporary stopping reached and removed, and the tooth retreated. When ready the temporary stopping and amalgam may be replaced.

4. A fourth class of cases is that of cervical cavities involving the pulp canal, in some cases creating a complete loss of canal continuity. Canal treatment is demanded but cannot be conducted by the way of the cavity of decay and if approached by way of a tap made through the crown from the occlusal surface, there will be difficulty because of the presence of the cervical and a necessity to pass the gap caused by it. Beside this there will be necessity to stop and unstop the cervical cavity at each sitting. To obviate these difficulties, prepare and make retentive the cervical cavity. Next make a sufficient occlusal tap to enable the treatment of all the canals. Third, pass a Kerr broach through the tap across the cervical cavity and into the canal beyond it. Ream with successive sizes until the canal is of a suitable size. Lay aside for ready use the largest broach used. When all the mechanical work is done, mix non-shrinking amalgam, wash and dry everything about the tooth; pass the broach into the canal as far as it will go and pack amalgam firmly into the cervical cavity. Let it set a few minutes, then place spunk over the filling and hold it firmly with a finger or instrument while the Kerr broach is gently twisted out, removing with it such amalgam as may have entered the grooves between its blades. If the filling is not held there is considerable danger that the filling will be lifted from its bed as the broach is turned. When partially set the filling is gently shaped with approximal trimmers. This leaves a canal continuous through tooth, filling, and tooth again. Through the occlusal tap the medicaments are applied and sealed in, it being better to defer placing a cotton in the restored canal until a subsequent sitting because of the danger of forcing small particles of amalgam into the upper portion of canals, from which they are difficult of removal.

In some of these cases there is danger of a subsequent fracture of the root at the location of the cervical cavity. In such a case, it is well to join the root and crown by means of a metal dowd. To do this enlarge the canals with reamers larger than the ordinary Kerr broach until a nicely tapering indio platinum post can be snugly accommodated. Use the post itself as a core: make the cervical filling and when made carefully withdraw the post and set aside. Treat the tooth and fill the canal apex. Readjust the post at a subsequent sitting, notch it at the point corresponding to the occlusal tap and set it in the root with cement: cut it off at the notch. As it extends from the crown through the amalgam and into the root extremity it will prevent fracture as well as it can be done.

These various simple uses of the core have been in my hands not only successful for many years but have been a great comfort by enabling me to turn exceedingly difficult and doubtful cases into simple ones. If they are of as much value to others as to me, I am repaid for my trouble.

DISCUSSION.

Dr. A. O. Ross: I have not had an opportunity of looking over this paper carefully, and do not feel prepared to discuss it.

I might suggest instead of spunk, the use of wax. A core of wax can be held in position just a little easier than spunk.

We will take a certain class of cases—for instance, a young patient with the corner broken off of an incisor exposing the cornea of the pulp. In this case you have practically no walls. If the patient is very timid you cannot make an application of cocain successfully and have to resort to an arsenical dressing to devitalize. If you will take a small cone or arch of wax and with a warm instrument stick it to the tooth covering the exposed pulp, then make a small band to go around the tooth as the orthodontist does and place it on with thin cement, it will be only a few moments until the cement will be sufficiently set so that you can take the wax out and place an arsenical paste, covering it with either temporary stopping or cement.

We find another class of cases which are very difficult to treat, for instance, a bicuspid or molar broken or decayed in such a way that a retaining cavity cannot be made without great pain. In these cases if they are too close together to use the band, I pass a wire, such as the orthodontists use, between the teeth and twist the ends together and turn them up or down as the case may be, over the cavity, the wax core being in place, I cover with cement; when hard, remove the core and treat as a simple cavity. I have found this method very satisfactory in helping me out of some very difficult places.

I am very much pleased to hear this paper and am sorry that Dr. Inglis was not here to read it himself, and take part in closing the discussion.

Dr. E. Ballard Lodge: This is a valuable paper in several respects. It shows how difficult and even desperate tooth conditions may be successfully treated. It is an advance in operative technique which should ever be gladly received. Teeth treated in the way the essayist has advocated by the temporary restoration of a quick setting amalgam are in all respects susceptible of the careful medication and treatment which teeth less badly broken down are capable of. This being the case we may expect equally good results in the way of cure of putrescent and abscessed cases. As Dr. Inglis has said, the complex condition is made a simple one. Nothing that I might add will serve to make the operations suggested by the essayist any more lucid or clear; neither can I make adverse criticism of the paper for any of the devices he suggests. I would, however, like to emphasize the importance of using a filling unyielding in nature to be employed when treatments are placed within the pulp canals of teeth. Gutta percha under pressure is bound to force the canal filled medicament through the apical foramen which is liable, if not almost certain, to cause soreness. Therefore, a material easily removable as calxine, which the essayist has mentioned, is a very valuable adjunct.

It seems opportune here to enter a protest against the reckless manner in which many dentists attempt the treatment of pulpless teeth. I have reference to the practice of admitting of saliva and its contained food debris and bacteria into pulp canals without adequate protection against such means of contamination. We see patients all too frequently whose complaint is that some dentist had treated certain teeth for many months or even a year or more without attaining a cure when it is apparent to our minds that the cause of failure to cure was lack of protection against the ingress of microorganisms. Where possible I deem it wise in canal cases to use the rubber dam and to practice aseptic and antiseptic dentistry. The essayist's methods make this possible.

It is well known that a punctured wound is the most likely to be followed by infection. In the case of a pulp canal and the introduction of ever so little saliva we are almost certain to get an analogous condition to that of a punctured wound.

The demands of dentistry are growing today beyond the requirements of former times, but the facilities at our hands are likewise ever increasing. Because of these things more may be expected of us.

Dr. Inglis has shown a refinement in operative procedure which, if practiced before by some, has not hitherto been so ably presented for our study and for our adoption in practice.

Dr. Canfield: I wish to make one statement in regard to what I believe to be an erroneous idea as to the elasticity of gutta percha. Rubber was known from the first to be elastic, but gutta percha was known to be plastic. The natives of Brazil named rubber *gomme elastica,* and gutta percha was called *gomme plastica.* They come from two distinct trees and are as different as the sap from the maple and the sap from the peach tree. Gutta percha is not elastic, and I do not believe you will get any more pressure in putting it in than you would to put in wax or any cement. You press down just a certain distance and it stops right there. I believe it to be, in my hands, the very best thing in the world for a temporary stopping. If it is worked carefully it can be placed in a cavity more easily than any other form of stopping. Gutta percha is used wrongly because it is heated with instruments. It should never be touched with a hot instrument. Warm it with a hot air syringe and handle it with cold instruments. It is plastic and you have no pressure.

Dr. Jackman: I want to say just a word or two. *Dr. Inglis* is a disciple of Dr. J. Foster Flagg's, and in that paper he has some of the old ideas. His idea was to always fill root canals in a way that they might be accessible in case trouble ensued, and he went further and said that trouble would always ensue sooner or later. When he taught that we had little else than carbolic acid for the treatment of root canals.

We believe in getting rid of all the trouble in these canals and filling them up solidly. I want to emphasize that particularly for the benefit of the young men. It seems as though Dr. Inglis keeps on practicing in the old way. I think, with the antiseptics and disinfectants we have today, it is unnecessary. We can get rid of all the disease and fill them up as they should be filled, and we will seldom have further trouble.

Dr. C. J. Lyons: There are one or two points in the paper to which I wish to take exceptions. It has been said that we cannot beat a man at his own game, and I presume that some of these methods in Dr. Inglis' hands would be a success, but in my hands I am positive they would be a failure. The point I wish to make is in his using gutta percha to form this fourth wall. In the second illustration he says, "for the secure sealing of canal medicaments in effective quantity, the preceding method may be employed, using temporary material for the covering, after placing the spunk in the pulp cavity. This enables placement of such medicaments as formaldehyde solutions without undue drying of the cotton pellet to prevent leakage, as would be necessary if the after covering were used." Then in the description of his method of using a permanent filling as a covering for the canal dressing, he said, "Then carefully trim the amalgam level with the buccal margin of the cavity and scrape away the portion overlying the spunk. Carefully lift out the several pieces, which is more safely done than if one piece be used. Trikresol and formalin on cotton is now placed in the pulp cavity, the margin of the tap is dried and quick setting adhesive cement, of which calxine is an example, is dropped into the orifice. If for any reason it is desirable to place the treatment under control of the patient, hot temporary stopping may be used instead." This is where I want to take exception. I do not believe we are ever justified in using temporary stopping where we are using Trikresol and formalin. If any of you have had the misfortune to have some of this drug forced through the apical ends of the root canal you know what it is, and by using a temporary stopping there is danger of forcing a portion of the trikresol and formalin to the apical end. In all cases I should use cement. I believe it is safer. I would say the same thing in the use of arsenic trioxid. Where he fills up the wall with gutta percha I do not think it is as safe as cement, because there is danger in getting a leak from that kind of a process.

In another case which he illustrates he really makes a more complex operation than I believe is necessary. He describes the case of having a large cavity on the distal surface of a left upper second molar. He fills the cavity part way up after placing the spunk over the pulp chamber, but not to normal contour. After the filling is set the spunk is removed and treatment made from the distal surface. In peference to doing this it seems to me a more practical method of procedure would be to first place the spunk in position and place a permanent filling in the distal cavity. Then as in the case described a filling already is in place on the mesial surface. This I would open into, remove the spunk and treat the tooth from the mesial surface where more direct access to the canals can be had. I do not believe a thorough treatment of the mesial canal can be made from the distal cavity of an upper second molar.

In the last case that he speaks of there is a large cervical cavity involving the pulp chamber, causing perhaps a complete loss of canal continuity. He does not treat the canal by way of the cavity of decay, but makes an occlusal tap, inserts a Kerr broach and places amalgam around it, practically filling the entire pulp cavity with the amalgam and then withdraws the broach and treats through the small opening left by the withdrawal of the broach. I see no objection in that perhaps, but I would prefer using the spunk, as he has suggested, filling the pulp cavity completely with the spunk then filling the cavity of decay with a permanent filling and drilling into the occlusal to get my opening and removing the spunk treat as a simple occlusal cavity.

As I have stated, this would be my method of treating some of these cases because I feel that I would be more successful. I believe the idea that the doctor has given us of the use of spunk as a core is splendid. I believe it is the safest way in the treatment of a great many of these hard cases; but some of the methods that have been mentioned, I am sure that I would not be successful with.

> TO live greatly is to feel greatly; to care greatly for many things; to care most greatly for some one thing—and that a thing that lies very near to some human soul.

A RATIONAL TREATMENT OF CHRONIC ALVEOLAR ABSCESS*

By Egbert T. Loeffler, D. D. S., Ann Arbor, Mich.

A CHRONIC abscess differs from an acute form in various respects; its course is slower, the signs and symptoms are, in the great majority of cases, modified, and in some cases altogether wanting. Quite frequently they are painless, with no tenderness to the touch and very little, if any, disturbance in temperature. Usually there is no tendency to point, and the pus very frequently forms in large quantities before we see any discoloration or yielding of the overlying soft tissues. There is a marked disintegration of pus corpuscles, the walls of the abscess cavity are thickened, the connective tissue becomes organized, and in most cases all signs of a return to healthy granulation is wanting.

We have then, as most of you may understand, a condition of passive congestion, in which the inflammatory disturbance is not marked.

The cause of this diseased process is usually due to the specific infection of a dead pulp, and especially of such teeth as have tortuous or inaccessible canals that are hard to open and cleanse and in which drainage is next to an impossibility. Not infrequently an unerupted tooth may be the cause of the disturbance. Broken broaches and root canal cleansers as well as protruding root canal fillings are to be mentioned as etiological factors.

I shall purposely refrain from entering into any extended discussion of the etiology, signs and symptoms of chronic alveolar abscess. The establishment of comprehensive courses in dental pathology in our schools, built on the firm foundation of the requisite scientific branches of anatomy, histology and physiology makes this preliminary talk unnecessary. And yet, a clear understanding of the diseased process is very necessary to carry out an intelligent treatment.

Many different authorities have said that this form of abscess really gives us a great deal of annoyance and discomfiture in the way of treatment if we wish to effect a permanent cure.

DIAGNOSIS

First of all those of us who are fortunate enough to be so situated as to have access to an X-Ray outfit, should have a skiagraph or several skiagraphs taken, so that diseased roots and the extent and location of the abscess cavity can be definitely located. If these facilities are not to be had we must do the best we can, by means of explorers, careful examination and history of the case, to establish or obtain the above mentioned information.

Not infrequently we find several roots involved, a small portion of the antrum or the space between two adjoining teeth.

---

* A talk before the Michigan 7th Dist. Dental Society, Port Huron, March, 1910

Within the last two months we have had in our afternoon clinics an unusually large number of abscesses of this nature and the skiagraph has been the greatest factor in the way of establishing an exact diagnosis.

Photographs showing abscesses in lower jaw.

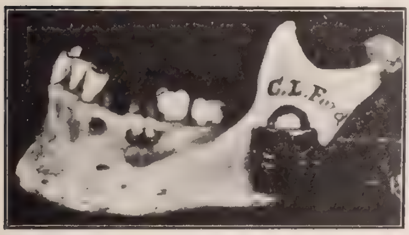


Fig. 1

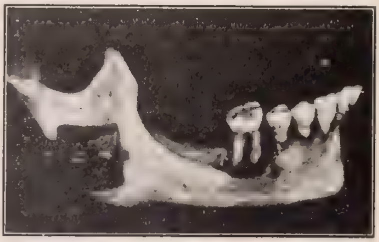


Fig. 2

Fig. 1. Photograph showing abscess of lower first molar in which all the hard tissue surrounding the roots has been destroyed by disease.

Fig. 2. Another case showing two abscesses in which there is more or less destruction of the hard tissue in proximity to the roots.

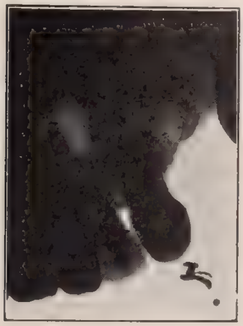


Fig. 3

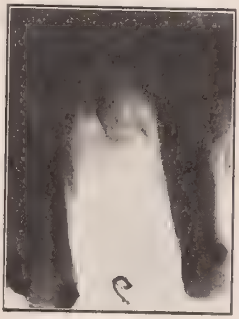


Fig. 4

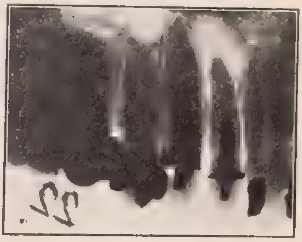


Fig. 5

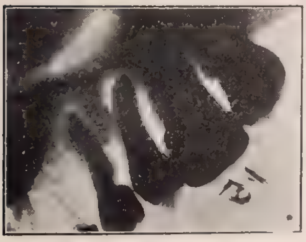


Fig. 6

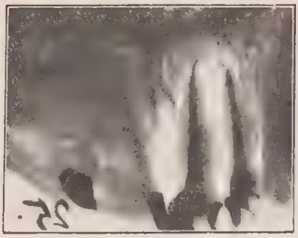


Fig. 7

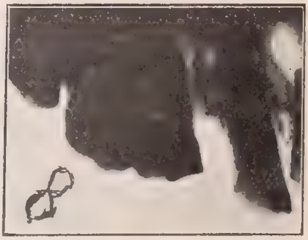


Fig. 8

Figs. 3, 4, 5, 6, 7 and 8: a collection of prints from skiagraphs from the writer's collection showing abscesses (chronic) in various localities.

Fig. 3. A chronic abscess between upper lateral and cuspid.

Fig. 4. A chronic abscess between upper central and cuspid with extensive necrosis.

Fig. 5. A chronic abscess of upper lateral with a porcelain crown.

Fig. 6. A chronic abscess of upper 2nd bicuspid.

Fig. 7. A chronic abscess involving roots of central and lateral.

Fig. 8. A chronic abscess of upper lateral incisor root.

One particular case that I have in mind is that of a man with a chronic abscess involving nearly the whole roof of the mouth. A second upper bicuspid, with a putrescent pulp, was considered as the cause of the trouble and treated as such but without avail.

A skiagraph revealed the fact that the root of a broken off lateral incisor was the cause of the whole trouble. At the end of this root there existed a large chronic apical abscess that was the source of all this infected area. The root was extracted and the cavity thoroughly curetted and treated and in a week's time was well on its way to recovery very much to the satisfaction of the patient and myself as well.

This clearly shows the importance of an accurate diagnosis as it saves a vast amount of annoyance and time to both patient and operator. This is especially important in difficult cases or such as fail to recover after persistent treatment.

TREATMENT.

Marshall in his new text-book, "Surgery of the Face, Mouth and Jaws," states "That irritation and inflammation sustain to each other the relationship of cause and effect. It is therefore readily seen that curative treatment, to be effective, must reach beyond the use of palliative measures, and destroy, eliminate, or render inert the active or exciting cause, by means adapted to the nature, course, and progress of inflammation and the condition of the patient. These methods may be radical or conservative, but in either case they should be directed to the removal of the cause of irritation at the earliest practicable moment, compatible with the surrounding conditions. When the disturbing cause is purely local its removal may sometimes be easily accomplished by resorting to a surgical operation, as, for instance, the removal of a fragment of bone, the extraction of diseased teeth, the evacuation of pent-up secretions, releasing strangulated tissues, rendering innocuous infective or acrid discharges, or promptly displacing the contents of abscesses and establishing drainage to prevent further accumulation."

It is a matter of common knowledge that any surgical interference in the treatment of chronic abscesses is never so urgent as in acute forms, the progress being slower and the constitutional disturbance less marked. Abscesses of this nature appear months, and in some cases years, after the first development of the initial cause.

According to modern principles of surgery an acute abscess should never be opened without antiseptic precautions. In the case of chronic abscesses this principle should be doubly emphasized, especially in debilitated subjects. It is my candid opinion that in the latter forms all antiseptic precautions should be of the most rigid and elaborate character, to guard against the dangers from infection.

Whenever devitalized, or unerupted teeth, or necrosed bone are the cause, any rational treatment would demand an early removal of the cause of irritation after the diagnosis has been made clear.

We are all familiar with the treatment of abscesses by trying to get drainage through the tooth, whenever that is possible, and after thoroughly cleansing the canal, sealing in a treatment of formocresol, or a 3 per cent. of formalin. Then we have what is known as the through and through treatment where a sinus exists. I use the term sinus rather than fistula for the following reason: A fistula is a canal opening into a natural cavity, as into the bladder or the pleural cavity. A sinus, on the other hand, means an opening or a canal leading into an artificial cavity or one produced by some diseased process.

In case of the through and through treatment, after affecting an opening through the end of the root, when conditions are favorable and also through the sinus, wash out the whole tract with a warm saline solution, or better still with an alphozone solution 1 to 1000. Most of us are probably familiar with this drug. It does not effervesce, is harmless to the tissues and is as potent as the bichlorid of mercury in the same strength. The solution is very readily made by adding one grain of the drug to two ounces of distilled water. The washing is done, as most of you may understand, by using the ordinary water syringe and inserting the end of the nozzle into the pulp chamber or canal of the tooth. Some authorities advise the use of hydrogen peroxid as a wash for this purpose. This ought not to be done. This drug produces so much effervescence that it is very apt to spread the disease. Our experience at the college clinic has demonstrated alphozone to be a very valuable drug for such purposes.

After this washing a stronger drug as iodized-phenol, or phenol-sulphonic acid should be forced through the canal by means of a sub-Q syringe or pumped up in the ordinary way with an old broach wrapped with cotton. (For the benefit of those who may not know I might state briefly, that phenol sulphonic acid is prepared by using equal parts of phenol and sulphuric acid C.P. The phenol is brought to the boiling point in a suitable porcelain dish and the sulphuric acid added very slowly. Then two parts of water are added or any number of parts of water depending upon the strength of solution desired.)

This part of the treatment is for the purpose of destroying the germs present and stimulating the process of repair.

In a chronic condition of this kind that has been going on for months the existing inflammation, if need be, must be changed into an acute form again. I frequently use a large syringe and produce a suction through the sinus so as to draw fresh blood to the diseased area and in this way bring about a decided cell activity.

In a large proportion of chronic abscesses the treatments outlined above, will, if carried out consistently, effect a cure.

There are, however, a certain small percentage of cases in which a more radical treatment is called for. A few isolated cases of long standing, and in which too much of the surrounding tissue has been destroyed, can only be cured by extracting the offending teeth. (See Fig. 1.)

RADICAL TREATMENT.

The first step in this method will be to secure a good skiagraph which will give us an exact outline of the abscess cavity and the number and extent of roots involved. (See Skiagraphs.) Then we choose a time for the operation at which we think the patient will be in the best possible condition for such work. If we are to use cocain, just after a meal would be the most suitable time and since a large amount of the drug is to be used an injection of a 1-60 of a grain of stryhnia is very desirable to counteract the deleterious effect of cocain. Next, as stated in a previous paragraph, the parts to be operated upon should be thoroughly cleansed with warm sterile water or a solution of alphozone or hydrogen peroxide. A spray operated by compressed air is an excellent facility for such purposes.

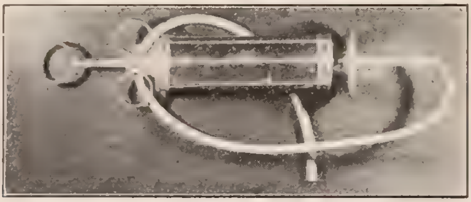


Fig. 9

Fig. 9. Large metal syringe with rubber tubing attached used to produce suction in the treatment of abscesses. Also for washing out the Maxillary Sinus in case of disease.

A 1 per cent solution of cocain is now injected into the sinus and the surrounding tissues. Occasionally the drug may be applied without the use of the syringe.

Very much of the success of the work depends upon this portion of the operation. Unless the parts are thoroughly cocainized the operator will flinch from doing his full duty or the patient will not stand for the pain. The next step is to use a sharp lance and cut down to the opening in the process leading into the abscess cavity and then enlarging this opening by means of surgical burs, especially designed for such work. I have for some time been using some burs that were designed by Dr. Schamberg, of New York City. There are two sizes; one 1-8 inch and the other 1-4 inch, each having four blades. They cut very rapidly and are very efficient in every particular. (See Fig. 12.) The cavity is now thoroughly washed with a warm solution of alphozone and if the patient is rather delicate I simply pack the cavity with some borated gauze and dismiss the case for a future sitting. At the next sitting, having complied with the usual precautions in regard to cleanliness, I wash the cavity again with a solution of alphozone and then pack same with gauze saturated with a 1% solution of cocain and adrenalin chlorid and wait for about 15 minutes for the drug to take effect. In some cases this operation must be repeated or a stronger solution must be used. We must remember that in all tissues suffering from a chronic inflammation the circulation is impaired and absorption is slow; therefore a little extra effort is required to bring the parts under the influence of cocain. Too much emphasis cannot be put upon this step in the treatment of chronic abscesses for the average operator will not and cannot do thorough work when he is realizing that he is hurting his patient.

In about 20 minutes the packing can be removed and if the work has been done thoroughly and the opening is large enough you will be able to see the end or ends of the roots involved. By means of suitable fissure burs these ends may now be cut off even with the floor of the cavity and the whole territory thoroughly curretted so as to remove all diseased and carious tissue. I have some specially designed instruments that I use for this purpose (See Figs. 13 and 14), but the ordinary sizes of straight spoonshaped excavators answer the purpose very well. The cavity is given a thorough washing again with a solution of alphozone after which we apply a treatment of phenol-sulphonic acid. A packing with some borated gauze will complete the operation for this sitting and the patient dismissed for at least 24 hours.

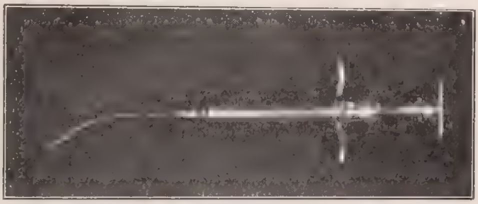


Fig. 10

Fig. 10. All metal syringe with long silver needle for injecting Bismuth subnitrate paste.

As a rule I do not repeat the packing with gauze more than twice unless it be a very difficult case. At the third sitting I usually fill the cavity with bismuth subnitrate paste.

While describing the operation for root end amputation I forgot to mention the fact that some operators prefer to use a chisel instead of a bur for such work. During the Christmas vacation I had the pleasure of spending some time in the office of Dr. Schamberg and it was he who first showed me the use of the chisel in that kind of an operation. The doctor is certainly able to do some clever work with that kind of an instrument.

I might state at this time that some authorities still claim that cutting off the end of roots in such cases is rarely, if ever, necessary. On the other hand there are those that maintain that this operation must be performed in every case without exception.

The same difference of opinion prevails in regard to the packing. Some that rank high in the profession claim that, outside of a small amount of gauze for drainage, no packing is necessary. In support of this practice they state that after the extraction of a tooth we do not as rule pack the socket with gauze.

Dr. Schamberg, on the other hand, says that he continues to pack and that in many cases it takes a month and in a few cases a year to effect a cure. I am still inclined to the opinion that some packing in severe cases is necessary.

BISMUTH SUBNITRATE PASTE

The treatment of chronic alveolar abscesses by means of bismuth subnitrate paste is attracting a great deal of attention just now. I have been using this method during the past year and am very favorably impressed with the results.

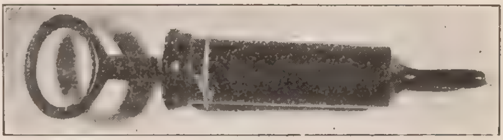


Fig. 11

Fig. 11. Vulcanite syringe which can be easily loaded with paste and its contents injected into the metal syringe.

The method was introduced by the Beck brothers of Chicago and much credit is due to Dr. Rudolph Beck for introducing it into dental practice. Those interested will find a valuable article on this subject by the above author, in the January number 1909 of the *Dental Review.* Another interesting article by the same author and on same subject in pamphlet form has been sent out recently to the profession that is certainly worthy of attention.

The paste consists of Bismuth Subnitrate 30 parts, White Wax and Paraffin 5 parts each, and Vaseline 60 parts. To give the paste more consistency I have doubled the amount of wax and paraffin. The best method of applying the paste is by means of an ordinary all metal syringe with a large sized, pure silver needle. I have found that the best way to fill this metal syringe with the paste is by means of a small vulcanite syringe that can easily be filled and its contents injected into the other.

As previously stated, after the second sitting I fill all abscess cavities with this paste, and repeat the operation every three or four days if necessary. According to the theory of Dr. Beck the paste answers the purpose of a sterile dressing and stimulates cell activity in a way that cannot be accomplished by any other agent.

The treatment, as outlined by Dr. Beck, by simply injecting the paste through the sinus into the abscess cavity, has worked very satisfactorily in my practice. This method presupposes, of course, that the root canal has been thoroughly treated and filled. Very much of the success by this method of treatment depends upon the thoroughness with which the work is done. The needle of the syringe must be introduced to the bottom of the cavity in every case and the paste forced into all portions of it. Persistent treatment in this way will effect a cure in a great many cases.

TREATMENT WITH MASSOLIN

Massolin is a pure culture of the Bacillus Bulgaricus (a lactic-acid producing bacterium), described by Massol, in a medium adapted for introduction into the nose and throat, as well as other body cavities.

Massolin is the outcome of a prolonged investigation conducted by the Lederle Laboratories as to the value of the Bacillus Bulgaricus (Massol) in infective conditions of various body cavities. This research was suggested by Metchnikoff's demonstration of the efficacy of this Bacillus in putrefactive processes in the intestinal tract.

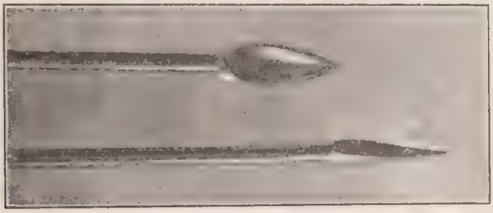


Fig. 12

Fig. 12. Showing a cut of Dr. Schamberg's surgical burs. The smaller size is ⅛ inch in diameter; the larger, ¼ inch. They are made to fit any hand piece and cut very rapidly.

The results of extensive clinical investigations fully justify the introduction of this remedy, and the observation thus far made indicate its use in many chronic diseases of the oral cavity.

Massolin is put up in bottles containing one-quarter ounce each. It is supplied in two packages, one containing two bottles and the other six. On each package is stamped a date after which unopened packages should be returned for exchange.

Directions for using are as follows:—The amount to be employed varies according to the condition under treatment. It is essential that the culture be liberally applied directly to the diseased area. In the treatment of chronic abscesses from two to three cubic centimeters is sufficient. A syringe, atomizer or canula, properly sterilized, may be used, but the operator should keep in mind the necessity of having a liberal quantity reach the diseased area.

It is also essential that before the application of Massolin the surface treated should first be cleansed, and crusts, pus or other matter thoroughly removed, so that the culture may come in direct contact with the affected tissues. Antiseptics should not be used in connection with this treatment. A warm saline solution may be used for the preliminary cleansing. This remedy may be applied at least three or four times a week. Should the entire contents of the bottle not be used, precaution should be taken to prevent the contamination of the remaining portion. No serious untoward effects have been reported following the use of Massolin.

Dr. C. J. Lyons of Jackson, Michigan, reported to me some very interesting information as regards the value of Massolin in the treatment of abscesses. I had given him a bottle of the preparation to try in the treatment of a chronic alveolar abscess of nine months' standing, and one which had resisted all manner and methods of treatments.

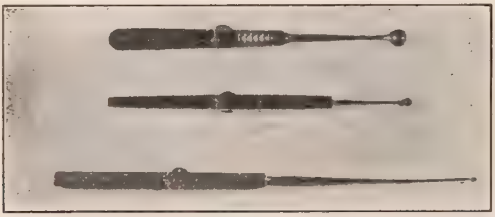


Fig. 13

Fig. 13. A cut showing suitable curettes used in the writer's practice.

This remedy was tried according to directions and within a week's time the case was pronounced practically cured. Evidently this agent is one that will take hold in severe cases.

FEES

The average practitioner fails to obtain proper remuneration for this kind of work. He neglects to explain to the patient the serious nature of the disease and the amount of time and patience required to effect a cure. In the larger cities oral surgeons charge from $50 to $150 depending upon the case and the amount of time required in the way of attendance and treatment. Patients are usually willing to pay for what they get and it is our duty to explain to them what they are going to get and the amount of time and patience involved in rendering such services.

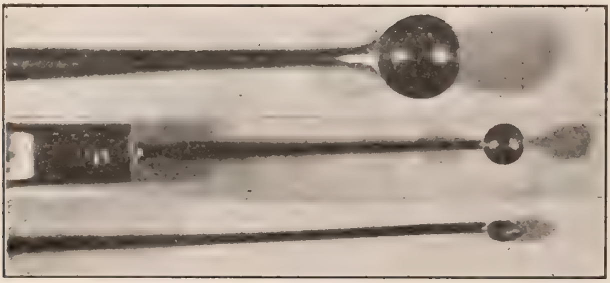


Fig. 14

Fig. 14. An enlarged print of the same instruments.

It is only too true that a patient will often go to a large city and employ the services of a specialist for the treatment of an abscess and pay a large fee when his own dentist could handle his case just as efficiently for half the amount of money. We have good competent men in our profession in nearly every city and town of the United States who are able to do just such work if they will only try, and then demand the remuneration that is in keeping with such services. You can just as well get ten times the amount you are getting for such an operation if you go at it in the right way and you will certainly get it if you do the work.

The average operator with an ordinary education and the facilities he has for obtaining the desired information can do all this work if he will only try. Our younger brethren are the ones who have to bear the brunt of the burden in these troubles. Slight mistakes and short-comings that are often overlooked in the case of older practitioners are very much magnified when they happen in the practice of the younger men.

In concluding this discussion I regret that time would not permit my going into detail in describing the various steps of this operation.

PRACTICAL POINTS AND POINTED PHILOSOPHY*

By N. S. Cox, D. D. S , Richmond, Ind.

IT IS a difficult matter to present a paper to a group of dentists of several years' experience without producing on their faces an expression of infinite weariness and long suffering which says plainer than words to the reader,—"We will listen to this since we must, but cut it short for we all have a better way of doing it." The hope of this paper is to present one or two methods, for saving teeth, which are in no sense theoretical, but have stood the test of years.

I have now been making inlays, both porcelain and gold, for some thing over ten years, running the complete circuit of high, low, and medium fusing porcelain; gas, electric, coal and gasoline furnaces; gold and platinum matrices, plain and hollow gold inlays, down to the last product of the cast gold inlay, which is the climax of all that has gone before.

I believe it is the conclusion of all fair-minded operators that the porcelain inlay is a success in practically all approximal cavities in the incisors and cuspids, and in labial cavities,—barring one thing,—the unreliable color produced by cement, which at present seems unavoidable. It is a decided failure in all occlusal cavities, and all cutting edges, on account of its friable nature. The frequent failures caused by warping of the matrix at some stage of the process has always been, and will always be a bar to its universal use in every-day practice.

Five years ago I discussed a paper before the State Society on porcelain inlays, in which I stated that porcelain inlays for contours were to be avoided in practically all cases, and I was roundly reproved by porcelain enthusiasts and it was stated that the larger the inlay the more practical it became. Do you know of one porcelain worker who has the temerity to make such a claim now? Those who use the porcelain at all, place it in protected cavities, to which it should always have been confined. I can show you approximal and labial inlays that have served for ten years and are as good as new today. The gold inlay was open to the same criticism in regard to the matrix until the advent of the casting process, and is only partly saved from it even by this method, owing to the danger of distorting the wax model in removing.

---

*Read before the Eastern Indiana Dental Society, 1910.

The dental profession seems to have made a mad rush for the cast inlay, equalled only by a horde of hungry politicians at the pie counter, and the ultimate result is in the dim future. There seems to be an idea prevailing that all one has to do to attain success with the gold inlay is to look pleasant, wave a magic wand, and lo! the tooth is saved beyond the possibility of recurrent decay until the angel Gabriel toots his little horn, and the self-satisfied dentist walks up to the throne and receives his crown, set with a few extra jewels as a mark of extraordinary merit. The anomaly is now frequently presented of a man who was never able to place a foil or amalgam filling that would pass muster, publishing himself as an expert gold inlay worker, and a long-suffering public pays the price, not only in money, but in teeth. This state of affairs has been partly caused, in my judgment, by the all-too-frequent reading of ''freak'' papers, and the performance of ''freak'' operations in society clinics,—that is, operations that are performed only rarely by the demonstrators themselves, and in the average office not once in six months; and yet these operations are made to appear as things done each day, and eminently practical. The fact is, if some teeth were filled with gold from the streets of the New Jerusalem they would yet fail occasionally, whether filled by the inlay process or what not.

This cast inlay process is, to my mind, one of the greatest steps forward in the saving of teeth made in recent years, and in many instances is a great saving of time and labor for the operator and annoyance to the patient, and will be a boon to many a tired back in certain classes of cavities; but he who thinks the day of hard, taxing application in gold work is over, or who fondly thinks to relegate his gold pluggers to the plunder room of outlived curiosities, will in the near future pull up with a thud equal to that of an irresistible force coming in contact with an immovable object.

Let him who thinks the gold inlay infallible place the rubber dam over one of his large contours put in one year or more ago, carefully dry the tooth, and examine the margins; the sight will not be wholly gratifying.

The attempt to apply gold inlays to all classes of cavities is one of the most deplorable tendencies in dentistry today, as was the same attempt with porcelain a few years ago. It results, in many cases, in the wholesale destruction of tooth substance which might be saved by other methods. The extension of cavities beyond the immediate danger of recurrent decay is at all times good practice, but the cutting away of sound, unaffected tooth substance in a mouth "where caries is not, never has been, and is not likely to be rapid," just for the sake of carrying out an idea, "is pernicious and willful and wholly unlawful destruction." There is only one practice more to be condemned than this, and that is the inexcusable grinding of only moderately decayed teeth and the placing of gold crowns. This practice is not only pernicious and wholly unlawful destruction of tooth structure, but often has back of it a mercenary motive.

There is need of a total reconstruction of our ideas relative to the crowning of teeth. A few years ago crown and bridge work swept the profession much in the same manner that the cast inlay process is sweeping it today, and one who could call himself a crown and bridge worker was considered to have reached the pinnacle of skill. And right there is where we need to readjust our ideas of skill.

I say unqualifiedly that any mechanic, any silversmith can grind a tooth and fit a band to the shape he produces, but it requires quite another order of skill to treat, prepare and fill that same tooth, restoring the contour and occlusion as nature intended it.

Another thing may be stated unqualifiedly, -There never has been, and never will be a gold band fitted to any bicuspid or molar that does not produce a degree of irritation, and form a lodgment for certain deposits, and in cases predisposed to interstitial gingivitis or to pyorrhea the band becomes a menace to the life of that tooth the moment it is adjusted, and just as surely leads to the eventual loss of the tooth as death and taxes.

Some one may say,—not if the tooth is shaped as it should be; but just there is the difficulty; teeth are not shaped that way, and it is practically impossible to grind them as they should be. Any one who has ever extracted teeth with gold bands on them knows that he never saw one that did fit snugly in all places. My preparation of roots for crowns is open for inspection at any time, by any one, but I am convinced that I cannot place bands on teeth without laying the foundation for subsequent irritation and recession of the gum. Some one may cite the numerous cases of bridge work of long standing as a refutation of the foregoing remarks, but they only prove what nature will stand for without rebellion, in *spite* of the irritation, and do not refute the fact that in a very large percentage of cases they are either simply tolerated or a positive irritant.

Crowns which are carefully and conscientiously fitted cause irritation, and what can be said of the iniquitous practice followed in 25% of the offices in the U. S., where merely the cusps of the tooth to be crowned are ground off, an impression taken of the tooth, and this mailed to some dental laboratory where boys, who never saw the interior of a human mouth, make the crown. It is mailed back and cemented to the tooth, fit or no fit; and often times the patient is highly pleased because it is so beautifully polished, never dreaming that such a crown is a whited sepulcher, soon to be full of dead men's bones and all uncleanness.

A finger nail may become a receptacle for much filth, and what can be said of such a cesspool as comes around crowns fitted in such manner? Held in an environment of warmth and moisture, the ideal conditions for putrefaction exist.

We hear much these days of tuberculin tested cows and pure milk; we spend much time and money in compelling the dealer to provide pure food, and prosecute him if he disobeys; then many thousands of people buy this pure food and milk, prepare it under the most sanitary conditions possible, and then, with much pleasure and complacency, masticate it in a mouth reeking with filth, with unnumbered bacteria lurking in open cavities, or under the bands of ill fitting hand-me-down crowns, pass it into the stomach thus laden with germs, and expect it to produce pure blood and lymph for the upbuilding of the body. Even a stomach equipped with the latest sterilizing apparatus could not do it. And the point about this for us as dentists is,—we are often responsible for the conditions in these mouths. You all know individuals who are going about serenely unconscious that their crowns and bridgework are breeding places for all forms of bacteria. They will tell you that they paid so much per tooth for it and it must be all right at that price. I have a high regard for bridgework which has been carefully and skillfully done, the roots patiently and thoroughly prepared, and the bands fitted to the tooth itself, and trimmed to the formation of the gum under the free margin; but I have only contempt for the method of sending impressions of poorly prepared teeth to a public laboratory, and I am surprised that any dentist can be satisfied with such work. You have your own opinion of a physician who treats his patients with patent medicines, which the patient could have bought cheaper over the counter of any drug store, and I think the cases have points of similarity.

I am well aware that some teeth really require crowning, and are saved by that means and could be by no other, and in all such cases should be used. But when it must be done, for the love of cleanliness devitalize the tooth and grind it until you can fit the band as nearly absolutely snug as is possible to human skill. And it is also many times advisable to place gold crowns on good teeth when by so doing the occlusion of several missing teeth is restored, but in all other cases the single gold crown should be rejected. I do not know of one skilled and conservative operator of reputation today who is not making every effort to eliminate the banded crown from his work; and in so doing the cast inlay is of immense help, where indicated.

One purpose of this paper is to offer suggestions for saving those teeth where inlays would result in the destruction of too much good tooth substance, and a crown would be worse than the inlay.

First, that class of cavities involving the mesial or distal surfaces, and a portion of the occlusal; the cavity large, and the walls, buccal and lingual, strong and of retentive shape, after being freed from decay. This is one of the cavities most frequently found in bicuspids, often in molars, and sometimes on the distal surface of cuspids. To prepare this class of cavities for inlays requires one of two things,—either the destruction of these retentive shaped walls and the removal of a large part of the cusps, or a degree of separation that one is rarely able to obtain, in order to place the completed inlay.

In practically all such cavities the fissures must be cut out and that forms the retention; then if the retentive form of the cavity is carefully lined with thin, quick-setting cement, and gold pellets of generous size pressed into position while the cement is in its most sticky state the entire cavity can be quickly lined with gold, and when the cement has set, which requires only a few minutes, the gold will be found more firmly seated than if placed in retaining grooves, and the walls of the cavity have been strengthened and preserved. The time required for the setting of the cement is rarely over seven minutes, if it has been mixed exactly right, and is more than compensated for by the increased speed with which one may proceed with the filling. Seven minutes spent in waiting on the cement will save fifteen minutes over the time required to fill retaining grooves or points, and the period of waiting may be profitably employed in work on other cavities, or at the crown and bridge cabinet. I sometimes find it necessary to make a retention at the cervical margin of the cavity, and use the cement only on the walls. This method obviates the difficulty always encountered by gold workers in making buccal and lingual retention in bicuspids without grave danger of exposing an arm of the pulp; which danger is greater in bicuspids owing to the erratic form of the pulp chamber; it also is a certain preventive of rocking in gold work. It is advisable to use pluggers deeply serrated in starting the filling after the cement hardens.

Personally I use this method of retention in a majority of all gold fillings, because it saves tooth structure, time and the pain incident to drilling retaining grooves. I find it a great boon to nervous patients not only in the process of preparation, but in finishing the filling as well, for, because of the cement lining, the tooth is less sensitive to the heat of the disk or strip.

With a little practice one becomes quite skillful in placing a minute quantity of cement in even very small cavities, and quickly pressing a pellet of gold to place, carrying both gold and cement well out to the margins of the cavity. By this method one obtains all the advantages of an inlay in the cement lining and retention, and eliminates the weakness of the inlay because of the washing away of the cement at the margins. The objection is sometimes made to this form of procedure, that the cement will not stand the malleting. It will not if used in large quantity, and indeed, that is the only danger. It should be used like a wood worker uses glue,—in the smallest possible quantity to do the work, and if so used it will stand the malleting in any amount, as I have proven by literally hundreds of cases.

Any one who has done inlay work realizes what a very slight undercut will effectually prevent the removal of a matrix or wax model, and in like manner a very slight retentive form is all that is needed where these "inlay fillings," as I choose to call them, are placed.

Now, for all those cases in molars, and a large per cent. in distal cavities in bicuspids, where the all-too-frequent procedure is to grind down the tooth and place a gold crown, this method is equally useful in using alloy for restorations, and is, of course, much easier so used than with gold; alloy not being so exacting in its requirements as gold. A much larger quantity of cement may be used under amalgam than under gold. It would be amusing if it were not so serious to see the elaborate care with which some operators will build up a tooth from the roots with amalgam, lining the thin walls with cement to strengthen them, and then later take a stone and deliberately cut away those walls, and place a gold crown. A moment's reasoning would show that practically the entire hope for the strength of that crown depends upon the amalgam, and assuredly no strength is gained by grinding off those enamel walls.

If those same walls were ground back sufficiently to extend the amalgam over them as a protection from the force of mastication, and then the same care exercised in lining the cavity and building in the amalgam so as to restore the occlusion, the strength of that tooth would be doubled over that of the crown, and all the unpleasant and injurious effects of the average gold crown avoided.

Almost all such cases can be built up with the ordinary Ivory matrix, but in some of the worst ones, where the walls are badly broken down, it is necessary to make a band of base metal, usually from the thin band metal used in orthodontia, and use it as a matrix for packing in the amalgam, cutting it off at the next appointment.

These bands can be made and adjusted in ten minutes. When these amalgam restorations are contoured in this manner, the cusps reasonably restored, and the whole given a thorough polishing, the result is infinitely better than a crown, and to the eye of many of your best patients, looks better as well. The inter-proximal space is preserved, there is no lodging place for deposits, no irritation, if polishing is well done. It is perfectly marvelous what restorations can be made in this way. If any one here is in the habit of grinding down such teeth for crowns, let me make this suggestion: the next time you build up a tooth in that manner, expecting later to crown it, just go a little farther and restore the contour and leave it, and see how long it will last.

A little work along this line and your faith will grow wonderfully, and amalgam will take the place in your work on posterior teeth to which it has long been entitled, but failed to attain through lack of testing. There is hardly a limit to the strength of amalgam if packed closely in a matrix. Anyone thinking to make large restorations without so surrounding the cavity that the amalgam can be packed firmly and thoroughly, will be doomed to disappointment. Mushy, soft amalgam will have no edge strength and will not take a high polish after it sets. It must be mortar mixed, and packed as dry as possible.

In my own work it is a frequent occurrence to remove molar gold crowns that have been a source of annoyance and profanity for months or years, and by the banding method above described, restore the tooth to usefulness, sans annoyance, sans profanity.

The question may be asked, "Will patients pay for such work?"

It will require more than one word to answer this question.

There is no man living who more earnestly desires to see the members of the dental profession elevated to a higher plane financially, than I.

I hope to see the day when dentists will have more standing in the business world; when a banker will not laugh when asked for the financial rating of a dentist.

But the way to attain that end is by the business-like care and investment of the money legitimately earned, and not by prostituting one's professional work to a basis where it is only a question of selling a given service for the highest price. Our first duty is to our patients, and the ultimate well being of the individual under our care should be foremost in our minds; not the quickest way to make $10.00, with no serious thought of the resultant service.

With this foreword, I answer, yes, patients will pay for such restorations herein advocated, and be glad to pay for them. You may be surprised what definite knowledge your more intelligent patients have of the objections to crown and bridge work, and how willing they are to pay for contour fillings that will avoid it.

Each one must be his own judge as to the value of his services, and we cannot all be satisfied with the same fees, but I find that my patients very willingly pay what seems to me a very good fee for such gold and amalgam restorations, and are quick to appreciate the fine points in the process. I am aware that one can perhaps make a gold crown in a little more time than is required for an amalgam contour, and many gold crowns, such as they are, are made in less time than is required for a gold restoration; but, in my judgment, there is no comparison between the two as to the real scientific restoration of the tooth, and when the difference in expense of material is considered there is little difference in the profit.

A few words in conclusion. Making due allowance for those teeth which are broken or destroyed by caries to such an extent as to make a crown imperative or an inlay advisable, and allowing for a large number of cavities where inlays may be placed at great saving of time and labor, and little additional loss of tooth structure, the argument advanced by the paper is, that in all other cases the gold or amalgam inlay-filling is to be preferred to inlays, and the single gold crown should, under all circumstances, be the last resort.

PREVENTIVE AND RESCUE TREATMENT OF THE MOUTH*

By N. S. Hoff, D. D. S., Ann Arbor, Mich.

FROM THE beginning of what we know as professional dentistry, there has appeared in various ways evidence that prevention of dental diseases was a possibility; and we can even trace the wish or ideal back as far as history records dental interference. No one knows how or when the tooth brush was instituted as an expedient for keeping the teeth clean. Its use in some form is met in every study of primitive peoples. It is true that these efforts were not based on our present scientific knowledge, and were practiced from motives of comfort or cosmetic customs. The first native American dentist, Dr. Josiah Flagg, of Boston, in 1785 advertised tooth brushes, chew sticks, and dentifrices for keeping the teeth clean. Without further citation we can be assured that preventive dentistry was possibly not an unnamed reality in our remotest history, and seems to be the one great hope of our profession at the present day.

A great step forward and a new hope of early realization came with the announcement by Professor Miller of the nature and cause of dental caries, coming as it did concurrently with the discovery of antiseptic surgery and therapeutics. We were sure then that the cause being known the means of correction would be but a matter of chemistry. And a flood of antiseptic lotions and dentifrices still sweeps over the land, but the impression hoped for is hardly discernable. By the aid of a high grade of technical skill the profession has been able to check the ravages of dental caries and diseases of contiguous soft tissue to a desirable extent, for a comparatively small per cent of our population, estimated all the way from 10 to 20 per cent.

By a public propaganda of oral cleanliness on the part of our profession, and manufacturers and venders of mouth toilet preparations, undoubtedly some real advance has resulted in the prevention of the most notable and important degenerative process taking place in any part of the human body. Within recent years the propaganda of "oral prophylaxis" has brought a new interest and some enthusiasm in this department of conservative dentistry. The result has been to call attention to the fact that the two great dental diseases, caries and peridentitis, are curable and preventable. But like the researches of Miller, Koch and others, the cost in labor and time is so exacting as to preclude its public ministration in such generous amount as to pronounce it the final desideratum. It has, however, convinced us that our profession has heretofore squandered too largely its time and energy in building mechanical crutches, as someone has put it, for our patients to hobble along on, and given too little serious attention to rational preventive treatment and popular instruction in oral hygiene.

---

*Read before the Odontological Society of Cincinnati, 1910.

I entered personally into a serious study of the work of oral prophylaxis as advocated by Dr. D. D. Smith and others as a research to determine its value and place in the college curriculum. I have met with so much in this experimental research that is convincng that I have a strong feeling that the profession generally is not at present alive to the fundamental value and necessity for a rigid practice of this art.

I have not time in this paper to present the whole of this subject for your consideration even were I able to do so. Like every one else who has become interested and has studiously engaged in its practice, I find that we as yet do not know all of its redeeming and preventing possibilities. I have, however, had some experiences that have caused me to formulate some theories as to the nature of conditions we are continually meeting and the results that should be expected from an adequate application of the principles of prophylaxis, which I shall assume are more or less familiar to all of you. I am frequently asked to dogmatize, as it were, on the treatment of these conditions, and to furnish detailed or specific treatment. I can't any more than an expert farmer can dogmatize on how to raise squashes. There is a wide variation in conditions and patients and I certainly am not yet in a position to commit myself to a narrow view or treatment as I find my experience almost daily modifies my ideas and methods. At the same time I want to present for your consideration as briefly as I may my present notion of what we have to contend with and how I have best succeeded. Should I seem over-confident or pedantic I shall be glad to have your criticism and correction.

First I want to say what I think of preventing dental caries. In a few words it is this: practically all dental caries is preventable by the skillful dentist, *who can have control of his patient from the age of two years and onward.* The cause of caries and its remedy can likewise be stated in a few words. Dental caries is the product of microbic function under favorable conditions and unmolested. Now it should not require a great mental effort for you to anticipate my idea of treatment with such a simple and specific premise. The fundamental principle which underlies is simple, but because of the innumerable accidental and complicating factors which almost every case presents, the practical or technical solution of the problem can never be easy, or be expressed in definite and routine formulas. You will, therefore, permit me to express my ideas and methods in as definite terms as possible with the understanding that intelligent variations should be made when conditions warrant.

TREATMENT

Treatment should be begun with the emergence of the deciduous teeth, as active and thorough as an intelligent conception of the needs warrant. The ideal to be kept in view is practicable cleanliness of every surface of every tooth, best accomplished by periodic and thorough polishing with pumice, phenol sodique, wood points, and floss tape. Impracticable, you say; possibly, but in my experience not so difficult a problem as at first it appeared. A periodic inspection and needed treatment by the dentist, supplemented by a personal toilet regime by the mother or nurse is not impracticable with intelligent and seriously minded people, and very soon the hearty co-operation of the little patient will be assured by intelligent and sympathetic handling. The dentists' work will fall largely into diagnosing threatening tendencies from insidious microbic deposits and the beginnings of caries; tardy development of the teeth into typically normal relations, etc. Every carious tendency should be aborted by removal with suitable abrasives, or the application of a durable sterilizing remedy, such as nitrate of silver or mercuric chloride and oxyphosphate of zinc or copper cement fillings as the case demands. Fissures predisposed should be sterilized and filled with thin cement worked well into place with finely pointed probes as suggested by L. J. Mitchell. Overlooked and deeper cavities should be filled with silicious cements or amalgams, and every deciduous tooth should be kept practically intact in *form and place* until its permanent successor is ready to replace it.

In addition to dental oversight, the patient must be made intelligent on the subject, not alone as to care of his teeth, but he must be particularly impressed with the value to him of a perfect dentition; what it means to him for his present and future welfare. He needs these organs in the best possible condition that he may be able to take the first and essential step in the development of his body, which, in time, will be worth more to him than money or any other emolument. Many contend with me that frequent prophylaxis treatments to children's teeth and much admonition is not desirable, because of possible discouragements and consequent neglect or antipathy, and also that no adequate ultimate compensation is gained. Of course much depends on the operator who must know and love children and be full of enthusiasm for his work. It is surprising how interested and helpful an intelligent and well-bred child will become, when properly handled. The results may not always be so evident as to requite your enthusiasm, but I am convinced that practically all caries and much of the orthodontic interference of the present day can be wholly avoided, or greatly simplified, by persistent prophylaxis treatment between the ages of two and ten years. I am also of the opinion that much of the throat and nose difficulty we now have to contend with can be eliminated. In fact, I am hopeful that with the co-operation of the nose and throat specialist, the orthodontist and the dentist, more than one-half of a child's customary illnesses can be eliminated, and the child be given a chance to develop to his normal capacity, with better chances for a long and active life without the serious handicaps that now make life a burden to many children when it should be a continued round of happiness and usefulness.

If we can retain the deciduous teeth in typical form and integrity for their full time we then come to the important period of the substitution of the deciduous by the permanent teeth. If the first period was one of strict surveillance and education, the next one is certainly one requiring equal attention if not so much education. The development of the facial bones so well promoted by the careful attention of the first period, should be similarly encouraged during the succeeding ten years so that the entire face may be formed into one of normal type and beauty; otherwise it may stop developing and become deformed, possibly to take on what some of our scientists term a degenerative or atavistic type. Personally, I don't believe we should degenerate, but that all the laws of nature teach us that our bodies as well as our souls should be cultivated and brought to that high type which our Creator designed. Neglect produces drunkards, paranoiacs and criminals, who are a constant burden and menace to society, many of whom would have been useful citizens if they had developed their bodies under a well ordered prophylaxis regime. They would have developed the sane system of morals that would not permit a life of shame or vice. Let us clear the respiratory tracts so that our children may develop full lung capacity and give them adequate masticating functions that they may prepare their food for proper assimilation and then we shall develop not only physical and mental athletes, but happy and moral people who will take pleasure in living and doing things that are worth while.

If it is practicable to save the deciduous teeth intact from caries, it should not be a more difficult task to carry the youth to maturity with all the permanent teeth in full form and order. The diseases and accidents of youth are no more prejudicial than those of childhood. In fact, the teeth are better structurally, the patient is more intelligent, and by the previous training will more willingly and effectively cooperate, and to me it seems that it is a very conservative view to take, that no dental caries should appear during the period of adolescence, under a rigid and continued prophylaxis treatment.

During this developmental period care should be taken to secure perfect occlusion of the teeth and expansion of the arches, with corresponding development of the facial bones, to insure adequate nasal respiration and freedom from disease of the respiratory mucous membranes and consequent injurious oral affections because of the close proximity of these structures.

It is probable that from accidental causes, lack of care, etc., more or less repair may be necessary in many cases, but when such care is necessary it will always be of the simpler forms because of its early detection, and it can therefore be the more thoroughly and permanently affected. If this procedure has been carried out to the age of maturity with all the teeth in place and integrally sound, the patient then starts out for the strenuous life with a big advantage, and he is certainly better equipped to meet the diseases and accidents of the next and most trying period of his life successfully, for the chances now are that because of his excellent habits of hygienic cleanliness, he will more highly prize his teeth, abuse them less, and consult his dentist as frequently as there is a suggestion of discomfort.

There results as a consequence of the habitual use of the prophylaxis treatment a condition of the gum tissues and the superficial appearance of the teeth that makes one believe that the gums can never become diseased and that caries should be an impossibility. This appearance is so pronounced and obvious that it charms one to go on with the work. I have many times been surprised to note results in patients, who have been under treatment until desirable results have been achieved, and then have left the city and returned after many months without having had any professional care in the meanwhile. Even when there has been apparently neglect of personal toilet, the value of the treatment is still evident. I am confident that if this treatment is wisely used during the formative period that it will leave the tissues in a condition to more persistently resist the carious attacks in adult life, at the same time there is every reason to believe that its continuation through the adult period will greatly extend the life and usefulness of the teeth, and prevent the usual peridental destructive diseases which is almost the invariable accompaniment of old age.

In order that I may devote some space and time to the *therapeutic* or *rescue phase* of this work I shall have to leave the further consideration of this *preventive* and most important aspect with this too brief consideration.

While the therapeutic or rescue treatment is a valuable feature I do not attach so much importance to its future practice because ideally there should be no occasion for its use. So long, however, as conditions are as we find them today, and oral diseases of the peridental region are so prevalent and the prophylaxis treatment is so valuable a remedy.

I want to give you as briefly as possible, my ideas of what these conditions are and my experience in their treatment.

To avoid provoking a discussion on the nomenclature of this class of diseases, I prefer to refer to them, not by their controverted names, but to use the simple term applied to similar diseases in other tissues of the body. Until we can find a better, I believe the use of the term Peridentitis designates inflammatory conditions of the soft tissues contiguous to the roots of the teeth more significantly than the terms now used most frequently. This term is not new and may not meet the views of the scientific philologist, but seems to meet my needs in directing treatment better than any other. That you may be better able to follow my references to treatment, I will define briefly my use of the term. By Peridentitis I would refer to all acute or chronic inflammatory conditions of gum tissue near to the teeth, caused by a local or systemic infection, or a combination of both. Necessarily the term should be qualified to express more specifically varying stages of the disease. I would suggest the following classification for convenience in adopting treatment:

First, a division to be known as Parenchymatous Peridentitis, because it is manifested as both acute and chronic inflammation of the functional organs in the gum and pericemental tissues. The mucous cells, circulatory organs, and nerves located in these tissues become affected and perverted secretions, pain, swelling and metabolic support is suspended. The gum festoons become swollen and irritable and separate from the tooth, they appear inflammed and are easily injured. If punctured persistent hemorrhage usually results, patient complains of soreness and inability to brush the teeth without hemorrhage. There may or may not be visible calcic deposits, or evident mucoid deposits. Careful examination reveals pockets of considerable depth and size with roughness of the root surfaces, and occasionally more or less discharge of pus. This is perhaps the most common form and stage of the disease.

The second stage of this classification should include those conditions having no active inflammatory symptoms, and may be named Hypertrophic or Stromatic Peridentitis, because it is characterized by excessive growth of tissue with no acute inflammatory symptoms and seldom develops a suppurative condition. It seems to be an overgrowth of the stroma with slight involvement of the functional organs of the gum tissue. Its cause can almost always be found in slight local irritation from calcic deposits or a roughness of the tooth root from erosion, or to interstitial growth of the stroma due to cell proliferation and lack of functional activity of the nerve distribution to the part, producing a condition similar to rheumatoid hypertrophy. This latter condition is associated with lack of active use or a general systemic discrasia.

The third form should embrace what could be termed Suppurative Peridentitis. This stage is characterized by a more or less profuse flow of pus and a destruction of both soft and hard tissues; it answers well to the name of Pyorrhoea Alveolaris. It is found associated with no specific microbic infection but mixed cultures are always present. It is not considered contagious. While inflammatory symptoms are always present the type is chronic. It may become acute at times, but usually makes slow and steady progress, destroying both hard and soft structures. In some cases the destructive action on the alveolus is a melting process not unlike caries, but with little pus formation. In other cases it runs from inflammation to suppurative necrosis with extensive loss of the alveolar bone, sometimes in the form of sequestra. This stage might well be subdivided, to more accurately describe its nosography, into the suppurative, carious, and necrotic stages, as each condition requires modified therapeutics. Rather than to complicate our presentation it seems best to use the simpler form as above.

The fourth form should embrace all those stages most frequently characterized by a recession of the gum tissue with little or no inflammation or suppuration. This I have called Gangrenous Peridentitis. In this condition there may or may not be much calcic deposit. If there is calcic deposit, it is not massed, but seems to be incorporated in fine granules with the tough and devilitized peridental membrane which is tenaciously attached to the tooth root. When this membrane is removed the root surface seems pitted or eroded. In many cases the gum margins while not much swollen are exceedingly sensitive and have irregular margins indicating an ulcerative type of infection. Pus is seldom present, if any discharge, it is a thin serum. In these cases the pockets about the roots are sometimes quite deep, but usually follow along the root socket as a sinus, and are so contracted as to make it difficult to explore them. The surgical treatment of these cases is many times exasperatingly difficult. There is a closely allied gingival affection which, however, has no well defined connection with the deep-seated gum elements, and particularly with the pericemental membrane, that might be included here; but it is superficial in its activity and belongs rather to the ulcerative type of stomatitis though it may be treated most successfully by prophylaxis methods. We then have the following classification:

1.—Parenchymatous Peridentitis,

2. Hypertrophic Peridentitis,

3.—Suppurative Peridentitis,

4.—Gangrenous Peridentitis.

We seldom find this disease in healthy youths or adults except as a result of accidents or local infection. I have seen some phases of it at the age of fifteen, but it seldom begins to show decided symptoms until the age of forty to fifty years. It is most common from forty-five to sixty years, and almost universal from sixty and on to old age.

When treatment can be applied at the incipiency of the disease its cure is certain and durable. Affections of long standing with serious destruction of tissue render permanent cures somewhat problematic. Conditions which were a few years ago considered incurable are now treated with assured success.

To be Continued.

PHYSICAL CULTURE FOR DENTISTS

By G. E. Harter, Toledo, Ohio

(*Continued from November.*)

> "Life of any kind without health is a serious handicap in the struggle for success. This is especially true to the dentist, whose very soul is on trial every day. His sympathy, patience, tact and endurance are put to the test every hour; and if he falls short in any of these elements of success, failure stares him in the face.
>
> "To the dentist, then, physical condition is of the utmost importance. Our chosen work calls for no physical exertion whatever. The more diligently we prosecute our sedentary and nerve-racking calling, the less physically fit do we become, depleting, day by day, whatever store of health and energy we may have possessed in the beginning.
>
> "In proportion that our daily occupation fails to supply opportunities to maintain a healthy and vigorous physical condition, in that proportion it becomes our duty—to our patients, to ourselves, and to our success, that we employ every rational assistance in the maintenance of that condition that will supply the energy so necessary to our success."—*J. R. Callahan, D. D. S., Cincinnati, in December Summary.*

The object of the physical culture recommended for dentists and other sedentary workers is not the development of great piles and knots of muscle; in fact, if it were possible to avoid such effects general results would be more desirable. At most, the development of special muscles should be considered merely incidental, the chief object being the bringing of the entire physical system into that condition of well-being expressed by the term "health." Of course, every muscle of the body should be brought into play, to the end of performing its proper function—the support of all parts of the anatomy without undue strain upon the bony structure.

The first and most important object of physical culture is elimination. Life is a process of combustion. "The fires of life" is no mere figure of speech. Every motion, every thought, every impulse, every emotion, burns up fuel stored in the body, leaving behind the ordinary products of combustion—ashes, cinders, clinkers, non-combustible mineral elements—that, unless eliminated, thrown out of the system, remain as detritus, clogging the canals, the pores and other eliminative ducts, until they become incapable of performing their proper function, and chronic fatigue results.

Fatigue is now known to be the result of lack of elimination. Could the body be brought into such perfection of condition as to at once eliminate all the undesirable products of combustion, fatigue would be unknown, and life in the body could be prolonged indefinitely. Men in the prime of physical development can endure long periods of intense activity without becoming tired. They can sustain strains with ease that would incapacitate the ordinary man. ''Prime physical condition'' in this sense must be understood to mean perfection of the eliminative function, not only through the larger drainage canals, but through the pores as well.

The clogging up of the human machine may be understood by comparing it with a steam boiler handled by an ignorant or indifferent fireman. If the grate-bars under the boiler are allowed to become and remain choked with ashes and cinders, a bright, clear fire, free from smoke and waste, and the economical use of fuel, are impossible. If the boiler-flues are allowed to become clogged with soot and ashes, and coated on the inside with lime and other mineral deposits, not only is the result in steam-production reduced to the minimum, but there is imminent danger of burning out the flues as well. If ashes are allowed to accumulate both over and under the grate-bars, a very few minutes suffice to burn them through, to the destruction of the fire-box.

The analogy seems to me to be perfect. The application seems so apparent that the explanation is unnecessary.

The proper elimination of the waste products of combustion in the processes of life depends entirely upon exercise. With proper exercise elimination is automatic, and goes on regularly, easily, comfortably, and without outside assistance, perfect physical health resulting. Without proper exercise, the entire system becomes clogged and choked. This choking continues, growing worse and worse, until even the large drainage canals become literally impact with sewage—with ashes and cinders; and then we run to the physician, or the drug store, or to the patent-medicine vender, and invoke his aid, and we get it, in the form of some violent, wrenching, tearing cathartic or purge, which would seem to suggest an attempt to repair a delicate Swiss watch with a twelve pound sledge.

In Italy they do these things better than we do. When an Italian finds his machinery clogged, indicated by a headache or a more than ordinary feeling of lassitude—in plain U. S., laziness—he does not rush to the dope-bottle, but to the sweat-chest; he takes a profuse sweat—the only occasion, by the way, upon which your true-blue son of Sunny Italy can be induced to indulge in perspiration voluntarily. In Italy, perspiration is a remedial measure, not an enjoyable function.

Any simple system of movements, bringing into play every joint, muscle and tendon of the body, followed to the point of slight fatigue, if persisted in faithfully, will produce the result sought. Complicated machinery is unnecessary; no machinery or apparatus is essential nor even useful except in so far as it serves as an incentive to exertion. Some men are so constituted that the thing that is easy to do is not done at all, and these should buy the most complicated and expensive apparatus obtainable.

for the sole reason that, in order to get the worth of their money they will be obliged to make use of it.

As we are not considering muscular development, nor even physical training for some special competitive event, but the culture of the body to the end of perfect health, efficiency, comfort and long life, we must consider every organ and function that goes to make up the complicated bodily machine and its successful, powerful and controlled action. By far the most important of the bodily organs, from the standpoint of the particular quality and degree of physical culture under consideration, is the breathing apparatus—the lungs; and, fortunately, this is precisely the one of the voluntary or automatic organs most easily brought under conscious control.

Deep, slow, complete breathing is the desideratum; shallow, rapid, incomplete breathing is the rule. Normal breathing, with the body at rest, should not exceed ten breaths per minute. Ask your wife to notice your ordinary breathing, while seated comfortably after the day's work, when you are not conscious of what she is doing. The chances are that she will inform you that you are breathing anywhere from fourteen to twenty times per minute. This means that you are not using more than one-half to two-thirds of the lung-area that you should use. You are not drawing into your body to exceed one-half of the solar vitality to which you are entitled, and you are using, in the accomplishment of this incomplete result, twice as much muscular force as is necessary.

All proper, safe and satisfactory development of lung-power must begin on the inside. To learn to breathe properly is to learn the A B C of physical culture; and to acquire this knowledge and apply it in practice means to acquire control of the breath. This fact has been known and taught in India for countless centuries, where the art of breathing is divided under many heads and practiced in many ways for the accomplishment of many purposes, some of them of far greater and more lasting importance than mere physical development and culture of efficiency. While much may be said later on these points, just here it is only necessary to again lay emphasis upon the importance of deep, full, slow and complete breathing, and how to acquire these results.

Most men breathe too low down; using what is called the low or abdominal breath almost exclusively. Most women, owing to the restrictive action of popular styles of clothing, breathe too high, using the high-chest breath to the exclusion of the others. The point to be aimed at is to acquire the complete breath—the low, the middle, and the high—bringing into service every inch of lung area. Most of my readers have a sufficient knowledge of anatomy and physiology to know why this is true, without being told. Leaving theory, then, let us proceed to practice, and take the first step toward perfect physical efficiency through the development and proper use of the lungs.

At the beginning, it is likely to be necessary to keep the mind fixed upon the exercises in hand. Later on, the habit of proper breathing is sure to become automatic, and will continue without conscious direction, whether you are awake or asleep. This is the point to be aimed at: the acquirement of correct bodily habits; habits are automatic, accustomed actions, that proceed without the conscious interference of the will.

For your encouragement it may be said that among animals the degree of strength, endurance and long life has been found to be in exact proportion to the depth, completeness and slowness of the breath. The slower and more complete the breath, the longer the life, the greater the efficiency and strength.

Stand or sit in any comfortable attitude that brings the body into easy balance. Lying down on the back will do, but is not recommended. Fill the lungs completely full, beginning at the bottom, but do not inhale until the lungs or muscles seem strained. Hold the breath while counting four pulse-beats. Then SLOWLY exhale, taking care that the lungs are completely emptied. Slow exhalation, the control of the breath as it leaves the lungs, is quite as important as inhalation. Begin by taking five breaths in this manner, first regularly three times every day, morning, noon and at bedtime. In a week increase the number to six times, the extra periods being brought in midway between the others. Practice before rather than after meals.

By the end of the second week, you will be ready to practice this method for periods of five to ten breaths every time it occurs to you. In a month if persisted in, you will find it becoming automatic; that is, you will notice that you are inhaling full breaths, holding them for a period, and slowly exhaling them, without conscious intention. Continue this exercise, increasing the count between inhalation and exhalation from four to six and then to ten, until it has become easy. Then begin holding the lungs empty, between exhalation and the next inhalation, for corresponding periods, commencing at four pulse-beats, gradually increasing to six, eight and ten.

In a very few months, the time depending upon faithful exercise and normal lung-power, the habit will have been created, and you will find yourself breathing but six to ten times per minute, instead of fourteen to twenty times, in perfect comfort, whether waking or sleeping; and this is the object aimed at, the acquiring of the habit, the automatic action.

Always try to inflate the lungs upward and outward. Carry chest and lungs as if the inflation were about to lift the body forward and upward.

A splendid variation should be practiced when walking. Fill the lungs slowly, while taking six steps; hold the breath while taking the next six steps; exhale while taking the next six. Then fill the lungs completely and take as many steps as you can while holding them full. Then exhale during as many steps as have been taken while inhaling. Then hold the lungs empty while taking HALF as many steps as taken while inhaling and exhaling. Repeat this until you do it every time you walk, which ought to be every time you go to or from your office. The dentist ought to forget that there are such things as street-cars and taxicabs. He should walk, walk, walk. But that is another story, that shall be told in my next installment.

To be continued

MOUNTING AN ALL-PORCELAIN CROWN ON A CAST BASE

By J. G. Lane, D. D. S., Philadelphia, Pa.

This clinic consisted in mounting an all-porcelain bicuspid crown in accordance with the method described in an article by the clinician in *Dental Cosmos* for March '08.

The method consists in interposing a gold casting between the cut-end of the crown and the root-end: one side of this disk-like casting fitting accurately against the cut-end of the crown, and the other side fitting similarly against the root-end. The object is, that the interposing of the casting has the effect of reducing the surplus cement line to as small a minimum as is present around a well fitting inlay, thus insuring greater invulnerability of the union as a whole.

The technique of the operation consists in preparing the root-end by facing it well back under the gum margin, but at no point involving the peri-cemental membrane. This cut surface will have quite a curve bucco-palatally. The root canal enlarged to No. 14 gauge for dowel. The cut-end of the crown is prepared by grinding until it will fit approximately to the root-end, and closely to the root-end at the extreme buccal aspect. This one point of close contact will have the effect of reducing the thickness of the pattern for casting at this point, so that should the gum margin ever recede far enough to expose the union between crown and root, a smaller line of gold will be visible. A small semi-circular notch is ground out of the palatine side of the crown where it fits toward the cut-end of the root. This allows a little more strength of wax pattern to come to the surface at that point for attaching the sprue wire, and also as a locating medium when assembling the casting and crown in cementing.

The cut-end of the crown is further prepared by coating it with oil or vaseline.

A round dowel of iridio-platinum wire, gauge No. 14, is cut to proper length, and further prepared by warming it, and allowing it to melt its way through a small mass of pink base-plate wax. This mass of wax should be sufficient in bulk to make the necessary adaptation between the crown and root. While the wax and dowel are still warm assemble the whole—dowel, wax and crown—on the wet end of the root, and press to place.

---

*Clinic at Lake Erie Dental Society, 1910.

Chill the wax, remove from root, and while assembled on the crown—out of the mouth—trim away the surplus wax that has squeezed out. Insert the sprue wire in the thickened part of the wax pattern, at the point previously mentioned, and again assemble all on the wet end with the sprue former in position in the pattern. This trial is to correct any defect or bending that may have been caused by trimming away surplus wax or inserting sprue wire. When all is properly adapted and fitted, remove from root, flask the wax pattern *with the dowel still in it*, and cast in the usual manner.

The casting thus produced is then cut and polished on its outer margin, and the two points—one between root and casting, and another between casting and crown—are cemented at one operation.

PRACTICAL HINTS

By M. M. Brown, D. D. S., Macon, Miss.

For separating models from the articulator, also for cutting down models that are too thick, I find the ordinary hack-saw is far preferable and much more rapid than the mechanical saw that most dentists usually use for this purpose.

For broach handles if you will try a round orangewood stick, that comes in bundles, cut to desired length and small hole drilled in same, you can easily insert broach with a pair of pliers. This holds broach firmly, is inexpensive and answers every purpose of any broach-holder.

Make your washers to be used on hypodermatic syringes, at joint where you screw on the needle, out of base plate gutta-percha by drilling hole in same sufficiently large to go over screw threads. These washers will not spread like leather, can be sterilized in any solution and are easily made.

The Pyrozone probe cup made by The S. S. W. Co. is very convenient in which to pour any solution that is to be used hypodermatically.

For cleansing the hands after doing any dirty laboratory work if you will try ordinary corn meal and soap you will find it very efficacious and at the same time harmless to the skin.

A METHOD OF MAKING AN ALL-CAST CROWN, THE INNER SURFACE OF WHICH SHALL BE IN EXACT APPOSITION TO THE SURFACE OF THE TOOTH WHICH SUPPORTS IT*

By W. R. Badger, D. D. S., Hubbard, Ohio

*Clinic at Lake Erie Dental Society, 1910.

Take a wire measurement at the neck of the tooth. Preferably, use a Sharpe rubber tooth form the size of measurement. Set it in the Sharpe flask and pour low fusing metal to obtain mold. Into this wedge a copper seamless shell crown.

Trim the natural tooth for the accommodation of the crown as conditions require, and note that a wire measurement of the root after trimming will be the thickness of the sides of the crown smaller than the first measurement.

Adjust the copper crown to the tooth, obtaining the bite and gum line, etc. Then fill the temporary crown with modeling compound and crowd to place to secure in the crown an impression of the root as prepared. The excess compound may be allowed to escape through a hole in the end of the crown, if there be one.

Set this model in the mold made in the flask. Encircle the flask and project an inch above it a piece of cardboard. Run low fusing metal into the impression in the crown, and over the end of the flask, filling it up within the containing cardboard. A model has now been made of the root and its position in the crown.

Remove the temporary crown from the mold and fill its place with wax. Into this press the metal model of the root, and see that it goes to place by coming in exact contact with the top of the flask.

The wax model of the crown shape desired is now easily removed from the mold, the metal forming the mold being in separable parts.

BRIDGING ANTERIOR TEETH*

By J. M. Crosby, D. D. S., Bradford, Pa.

I am going to show you a method of bridging anterior teeth without displaying any gold labially, and without destroying pulps of teeth to which bridge is attached.

Enough of enamel on lingual surface is removed from two adjoining teeth to allow the use of two plates of gold strong enough to resist attrition and attach two pins of iridio platinum 20 gauge round wire, parallel holes for which are drilled first with No. 1 and followed by No. 2 bur, without involving the pulp. The pins are threaded with the tap of the Bryant bridge repair outfit to give additional attachment to the cement and to the gold plates to which they are cast.

The threaded pins are placed in position in mouth, waxed, trimmed to proper articulation, withdrawn, cast, reassembled in the mouth, impression and bite taken and finished in the usual way. Before cementing in mouth the pin holes in the teeth are threaded to give additional attachment to the cement.

---

*Clinic at Lake Erie Dental Society, 1910.

"This learned I from the shadow of a tree,
That to and fro did sway upon the wall,
Our shadow selves—our influence may fall
Where we can never be."

THE ELIMINATION OF ALL GUESS WORK IN THE CONSTRUCTION OF DENTURES*

By Drs. J. A. Borts and C. O. Booth

USE OF FACEBOW AND ANATOMICAL ARTICULATOR.

The usual steps towards fitting the trial plates in the mouth, are all to be performed before bringing the face-bow into use, the bite plates are removed from the mouth and the fork of the mouthpiece of the face-bow is heated and pressed into the front of the trial plate, preferably the upper one, on a line parallel with an imaginary line drawn from the external auditory meatus to the base of the nose.

The positions of the condyles are marked upon the cheeks of the patient by means of a pencil or court plaster. The pointers at the end of the face-bow are adjusted so that they will barely pass over the cheeks of the patient. The ends of the pointers must be equidistant from the ends of the bow, this is done by counting the scores upon the sliding rolls, and secured by turning their clamping nuts. The trial plates are replaced in the mouth, the bow-clamp is passed over the stem of the mouthpiece, the pointers are placed directly upon the marks on the cheek which denote the position of the condyles, and the bow-clamp is tightened. The bite-plates with the face-bow attached are removed from the mouth and the face-bow attached to the articulator. The model supports should be brought parallel with each other by means of the adjusting screw. The upper model is now secured to its model support with plaster. The lower trial plate being correctly attached to the upper one, its model is placed in it and secured to its support with plaster.

The bite plates are now returned to the mouth, the bite-gauges are in position, and a bite is taken, as before, with the mandible protruded. The bite plates are returned to the articulator, the clamping nuts are tightened. and the spring replaced, which brings the lower model back to the normal position.

RESTORATION OF LINGUAL WALL OF UPPER FIRST BICUSPID BY THE USE OF POST AND GOLD INLAY*

By J. S. Ashbrook, D. D. S., Pittsburg, Pa.

This is a practical substitute for gold, or Richmond crown. On account of this particular tooth (upper first bicuspid) being so liable to fracture after devitalization, owing to deep sulcate groove, it has been found advisable in several instances to use the following method:

Method of procedure briefly as follows:

I. Obtain a flat base with remaining wall parallel or slightly inclined toward the buccal.

---

*Clinic at Lake Erie Dental Society, 1910.

II. Prepare lingual root with fissure bur one-half millimeter larger than platinum post.

III. Make wax model as in ordinary gold inlay with post in position.

IV. Remove with post in position.

V. Remove post from wax, and encase in *platinum foil* that portion which belongs in model.

VI. Heat moderately and replace in model.

VII. Adapt to cavity again, so as to be sure of correct position of post.

VIII. Invest and cast.

IX. Remove post from inlay and place in position with either cement or amalgam.

X. Place your inlay in position before completing the operation.

A METHOD TO RESTORE AN IMPERFECT CASTING IN ALUMINUM PLATE WORK

By J. F. Gatts, D. D. S., Pittsburg, Pa.

Some men have the misfortune sometimes of having an imperfect cast in their aluminum work. If you will be careful in separating your flask after casting, and find you have an imperfect cast, while the cast is yet on the model, take a small piece of the material, place over the defect, then heat with a needle point flame from your blow pipe for a radius of half an inch around the parts; when the metal and the surrounding parts are in a partially molten state iron all together with a suitable round-end spatula. You have then saved your cast.

A METHOD OF REMOVING AND REPAIRING A GOLD CROWN

By E. S. Hodgson, D. D. S., East St. Louis, Ill.

In using a crown slitter the patient is made to suffer unduly and the crown is often damaged beyond repair.

A much easier way is to drill through the crown at a point where the cusp is soldered to the band into the layer of cement between the cusp and the tooth. Follow through almost to the opposite side of crown. Now insert an old straight plugger or any instrument of sufficient strength, as far as possible and with this as a lever, gently work the crown up and down till the attachment of the cement is broken, when it can be easily removed.

After cleaning the crown with acid take a small pellet of filling gold and roll between thumb and finger and insert half way into the hole in the crown. With a pair of contouring pliers, at one stroke the gold can be pressed flat, forming a rivet of gold over which a small quantity of 20-k. solder is flowed. With a cuttlefish disk the work is finished without leaving a scar.

A CONTOUR AMALGAM FILLING*

By J. D. Whiteman, D. D. S., Mercer, Pa.

An inferior first molar with mesial and distal cavities and a considerable portion of the crown broken down. The pulp had previously been removed and roots filled.

The cavities were prepared according to Black, and anchor screws were employed to reinforce filling and strengthen labial and lingual walls, and the tooth built up with amalgam.

The chief objects of the clinic being to show the possibilities of this method of restoration and thus avoid resorting to a gold crown.

Attention was also called to the mistake so often made in attempting to finish approximal surfaces of soft amalgam fillings with a strip to the injury of the contact point. Dr. Whiteman finished these surfaces with an ingenious knife or trimmer.

---

*Clinic at Lake Erie Dental Society, 1910.

THE CONDITION OF MOUTHS OF PUBLIC SCHOOL CHILDREN*

By L. Waddell, D. D. S., Pittsburg, Pa.

This clinic was to show the condition in the mouths of children in our public schools.

One case where all inferior deciduous and permanent teeth back of the cuspids had been extracted to relieve toothache, by an M. D., the child, now eleven years of age, is trying to masticate his food on the six anterior teeth.

A number of models showing where roots of deciduous teeth were causing malocclusion, ulcerated tongues, and one case, where a deciduous central had almost perforated the lip.

Is it not high time the dentists are doing more for the education of the public?

In the examination of 732 children, ranging from the age of 6 to 15 years, I found there were 1214 roots and teeth needing extraction, 1990 teeth needing immediate attention.

59 abscesses discharging pus into the mouth.

9 children that had filling in their mouths.

25 mouths that didn't need any immediate attention.

---

*Report of Clinic at Lake Erie Dental Society, 1910.

Yet in opinions look not always back:
Your wake is nothing, mind the coming track;
Leave what you've done for what you have to do—
Don't be "consistent," but be simply true.

EDITORIAL

MISTAKES OF MEN

NOT long ago an occupant of the English bench, Judge Rentoul, in an eloquent address which he delivered in London, told his hearers that there were fourteen very serious mistakes which men were prone to make in life, and he proceeded to enumerate them as follows:—

"To attempt to set up our own standard of right and wrong and expect everybody to conform to it.

To expect uniformity of opinion in this world.

To look for judgment and experience in youth.

To endeavor to mold all dispositions alike.

Not to yield in unimportant trifles.

To look for perfection in our own actions.

To worry ourselves and others about what cannot be remedied.

Not to alleviate, if we can, all that needs alleviation.

Not to make allowance for the weaknesses of others.

To consider anything impossible that we cannot ourselves perform.

To try to measure the enjoyment of others by our own.

To believe only what our finite minds can grasp.

To live as if the moment, the time, the day were unimportant.

To estimate people by some outside quality, when it is something within which makes the man."

There is much food for reflection in the above and every man who heeds the suggestions given will be a better man for it.

And in this connection we might speak of a few mistakes the dentist makes,

When he criticizes the operations of another dentist or the fee that may have been charged for them.

When he allows himself to believe that his methods of operation and procedure are the only good ones.

When he thinks only of the remuneration he is to receive for an operation and not of the quality of service he should render.

When he looks upon money as the *ne plus ultra* of success and happiness.

When he depletes his physical strength by working overtime and Sundays.

When he ignores the benefits of outdoor exercise and recreation.

When he thinks that he knows it all and can learn nothing by attending dental society meetings.

When he believes that the education of the public in dental and oral hygiene will not result in increased patronage for the dentist.

When he does not read the dental journals and keep posted on the newest and advanced methods and means in dentistry

SOCIETY·ANNOUNCEMENTS

THE COMING MEETING OF THE OHIO STATE DENTAL SOCIETY

THE coming meeting of the Ohio State Dental Society at The Great Southern Hotel, Columbus, December 6, 7 and 8, 1910, promises to be an especially interesting and instructive one.

At the time of this writing the program has not been arranged in detail but will probably be about as follows:

Tuesday, Dec. 6,—The President, Dr. M. H. Fletcher, of Cincinnati, will read a paper on "The Reparative Powers of Cementum." Dr. W. H. Whitslar, of Cleveland, will read a paper on, "The Physiology and Anatomy of the Gums and Sockets."

Dr. T. B. Hartzell, of Minneapolis, will read a paper on "Infection and Pathology of Gums and Sockets."

Tuesday evening, Dr. F. E. Roach, Chicago, will give "A Talk on the Construction of Partial Dentures," and illustrate it with stereopticon.

Dr. Thomas E. Weeks, of Philadelphia, will give a talk on the subject, "Some Illustrations of Foundations and Superstructure of Crowns."

Wednesday morning will be occupied with clinics by visiting guests:

Dr. F. E. Roach, Chicago, on "Partial Dentures" and on "The Staining of Porcelain."

Dr. Joseph Head, Philadelphia, on "The Use of 'Tartar Solvent' in Pyorrheal Conditions."

Dr. T. E. Weeks, Philadelphia, will clinic on "Crown and Bridge Work."

Dr. N. S. Hoff, Ann Arbor, will give a demonstration of "Instrumentation and Medication of Gums and Sockets."

Dr. Chalmers J. Lyons, Jackson, Mich., "A Surgical Operation for Cleft Palate."

Dr. S. L. McCurdy, Pittsburg, "Surgical Treatment of Extended Diseases of the Sockets and Bones."

Dr. T. B. Hartzell, Minneapolis, on "Instrumentation in Pyorrhea Alveolaris."

Wednesday afternoon Dr. N. S. Hoff, Ann Arbor, will read a paper on "Instrumentation and Medication of Gums and Sockets."

Dr. Joseph Head, Philadelphia, "Prophylaxis of Gums and Sockets."

Dr. S. L. McCurdy, Pittsburg, "Extended Diseases of the Sockets and Bones; Surgical Treatment."

Wednesday evening will be an open night for attending the theater or other diversion.

Thursday morning will be a demonstration by from eighty to one hundred Clinicians in the various branches of dentistry.

The Dental dealers will have instructive exhibits as heretofore, lasting the entire session.

Every dentist in Ohio should cross off from his appointment book the three days, Dec. 6, 7 and 8 and attend this meeting—many instructive points can be gained and the social features will be enjoyable.

New Officers of the W. Virginia Society

The West Virginia Dental Society held its annual election of officers at Parkersburg, Oct. 13, with the following result:

President, Dr. L. J. Walker, of Grafton; first vice president, Dr. W. J. Boydston, of Fairmont; second vice president, Dr. George L. Beerbower, of Terra Alta; secretary, Dr. Frank L. Wright, of Wheeling; treasurer, Dr. D. C. Clark, of Blacksville; executive council, Dr. D. C. Clark, of Blacksville; Dr. F. L. Wright, of Wheeling; Dr. W. J. Boydston, of Fairmont; Dr. L. J. Walker, of Grafton; Dr. L. George Beerbower, of Terra Alta, Dr. John E. McClure, of Wheeling, and Dr. James E. Dowden, of Fairmont.

The G. V. Black Dental Club

The G. V. Black Dental Club of St. Paul, Minn., will hold a midwinter clinic in St. Paul, on Feb. 16-17, 1911.

A very interesting program is being arranged. Operations will be made and papers read by prominent members of the profession. Full program will be published later. The profession generally is invited to attend this meeting.

For further information address R. B. Wilson, Secy., Am. Nat. Bank Bldg., St. Paul, Minn.

National Institute of Dental Pedagogics

The annual meeting of the National Institute of Dental Pedagogics will be held in Washington, D. C., December 27th, 28th and 29th, 1910.

South Dakota Board of Examiners

The South Dakota State Board of Examiners will hold its next meeting at Sioux Falls, S. D., January 10th, 1911, beginning at 1:30 p. m. and continuing three days. All applications for examination, together with a fee of twenty-five dollars must be in the hands of the secretary by January 1st. Applicants who have not complied with the above will not be permitted to take the examination. For further information, blanks, etc., address Iris L. Revell, Lead, S. D.

NEWS and OPINIONS

ORAL AND DENTAL HYGIENE IN CANADA

Our Lecturer visits St. Thomas, is given a Royal Welcome and delivers two Addresses before large Audiences

A large amount of our space in this department is this month given over to a brief account of the visit of Dr. Dowd, THE SUMMARY lecturer, to St. Thomas, Ontario, and a newspaper report of the lectures delivered by him.

Some months since THE SUMMARY referred to the completeness with which arrangements for these lectures had been made by the committee of the Elgin Dental Society having the matter in charge. Herewith are given portraits of Dr. F. E. Bennett, Chairman, and his two coadjutors, together with a flashlight view of the rink, showing part of the audience of school children that completely filled the immense auditorium.

Flash-light View of part of Splendid Audience of School Children at St. Thomas, Ontario.

We had intended printing a still more complete report of the most successful meeting that has, thus far, been held in connection with our part of the great educational movement, and the meeting was reported stenographically for the purpose. Unfortunately, however, we have been unable to secure a transcription of the stenographer's notes, and are obliged to depend upon the following extract from a newspaper, for which we are indebted to Dr. Bennett:

A lecture, the pith of which contained the axioms: "Clean teeth never decay," "Cleanliness is Godliness," and the advice, "Take care of the sixth year molar," was delivered by J. W. Dowd, L. L. D., yesterday afternoon to a crowd of 2,500 boys and girls and their teachers in the Granite rink. The children maintained excellent order, and the lecture, illustrated by charts, was sufficiently simplified to be comprehended by the tiniest girls and boys present.

The rink was decorated handsomely with flags and bunting; and the lecturer was escorted by Chairman Roberts, of the Board of Education; Dr. Bennett, chairman of the Educational Committee of the Dental Society; Trustees Dr. Lumley, A. P. Conley and A. W. Graham; Mayor Guest and several members of the Dental Society.

The pupils marched in, according to prearranged plan and seated themselves in orderly fashion. After a photograph of the assemblage had been taken, Principal Faw, acting as chairman, introduced the mayor, who extended the welcome of the city to the guests and congratulated the dentists on the energy with which they were devoting their assistance to the board of education. He hoped the city would soon be invited to assist in the work of furthering the means at hand for the protection of human life.

Principal Faw then requested the careful attention of the pupils to the address of Dr. Dowd, whom he introduced as a former principal of the public schools of Toledo.

Dr. Frank E. Bennett, Chairman Committee of Arrangements.

Dr. Dowd was cheered to the echo. When the enthusiastic greeting had subsided he proceeded to state in simple terms the elementary principles of dental hygiene and the relation of the teeth to general health. He said in part:

The greatest wealth of a nation is its health. Everybody wants to be strong and beautiful and to be so must be healthy. The finest wealth of St. Thomas is in its future citizens and their health must be the first consideration.

It is a fact that 5,000 men were rejected by the surgeon-general of the British army because of bad teeth. Dental inspection has advanced farther in Germany than any other nation because the Emperor requires healthy men for soldiers and has realized the importance of such inspection.

With charts he then explained the details of the growth of the teeth. There are at first ten milk teeth in the upper jaw, and ten in the lower. At the age of six years or thereabounts a sixth tooth comes in on each side of the upper and lower jaws. These teeth are permanent and should be looked after.

A clean tooth never decays. It is as important to protect the milk teeth as the permanent teeth. They should be cleaned morning and night with a brush, brushing vigorously from the gums toward the crowns with an upward and downward movement.

Breathing through the mouth causes a misplaced pressure which ruins the arch of the teeth and creates a sagging jaw with protruding front teeth, called the squirrel mouth.

In order to insure proper, permanent teeth, the first teeth should be kept healthy and clean and should never be removed until made necessary by the pressure of the permanent teeth.

Some parents insist on having the temporary teeth extracted too soon because of decay. This permits the permanent teeth to erupt irregularly.

The structure of the tooth was described and the causes of decay explained. Dirt is the prime cause, but sometimes hard usage, such as cracking nuts, breaks the nerve and causes the tooth to die.

Dr. T. C. Trigger, Committeeman.

The effect of dirt on a tooth is the same as vinegar on an egg. If an egg were placed in vinegar, the acid would soon eat the lime from the shell until the egg could be passed through the neck of a bottle. When a break comes in a tooth, dirt, particles of food, etc., enter and introduce the germs which sometimes cause disease. Abscesses are formed when this foreign matter reaches the pulp of the tooth.

Dentists could fill and repair bad teeth; but they could not make them as good as healthy teeth.

There were two important things to remember, "Keep the teeth clean to prevent decay," and "Take particular care of the sixth year molar, on which depends the straightness of permanent teeth."

The gathering was dispersed with the singing of "God Save the King."

In the evening, Chairman Roberts of the board of education presided, and introduced the speaker with a brief speech in which he announced that the board was seriously considering a practical application of the theories of dental inspection and of arranging for a series of lectures along health lines. Dentistry was but one phase. The medical association would also assist. It was imperative to take care of moral as well as physical health, and this depended on the character of the teacher employed. He did not believe in the teaching of religion in the school, but the time had arrived when ethical science might be taught. It would be a good idea for the ministerial association to co-operate in this line, as well as medical and dental associations.

The evening lecture reiterated the importance of the sixth year molar which was so commonly ill cared for, and the necessity of keeping the teeth clean.

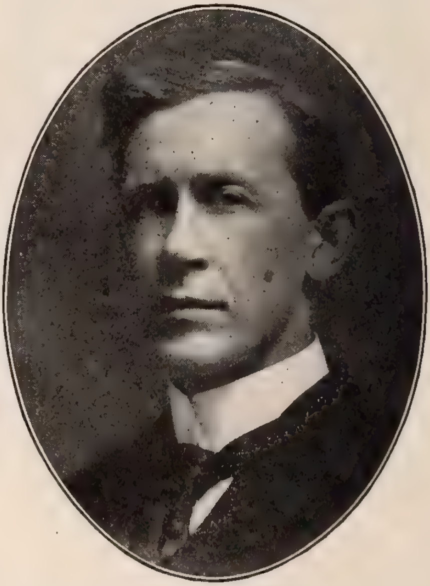
An Oklahoma senator, Dr. Dowd said, introduced a bill for the establishment of a department of public health with a cabinet minister at the head, and in the course of his speech quoted statistics to the effect that approximately 3,000,000 people were ill in the United States of preventable diseases caused by ignorance and neglect. Of these 1,000,000 were ill enough to require the services of physicians and nurses. Over 600,000 died annually who might be saved by the exercise of the commonest care and most rudimentary rules of health. This meant an economic loss to the country of two billion dollars annually.

This bill did not receive much attention because Theodore Roosevelt and others were scrapping over the conservation of water, coal and lumber. A woman wrote to the department of public health to secure information regarding the treatment of tuberculosis, and received a reply that none was available. Yet her neighbor wrote to the department of agriculture regarding hog cholera and was supplied with minute information.

Some people asked: What have teeth to do with public health? The mouth is the gateway to the body. If the portal is kept clean the rest would be easy.

In a school room of forty pupils at least six square feet of breathing surface is exposed. Of this much was putrescent and foul. A similar spot on the floor would be complained of at once. Yet nothing was thought of it in mouths. Right here is shown the influence of one child's health on another's. The cough of one child with decayed teeth containing the germs of tuberculosis, pneumonia, etc., is as dangerous as the pistol of a man, fired promiscuously into a crowd.

The principles outlined in the afternoon lecture were again emphasized and explained by the assistance of lantern slides. The sixth year molar is the keystone of the arch of permanent teeth. The extraction of milk teeth too early hinders the full development of the jaw, and causes confusion and ugliness in the crowding of the permanent teeth.



Dr. C. C. Lumley, Committeeman.

There is no more fruitful breeding place of disease than decayed teeth. The alimentary canal which carries food to the whole system could be kept pure and healthy very easily if the mouth were always pure. Bad teeth and improper mastication are responsible for liver complaint, stomach complaint and various other disorders.

The wonderful operations of orthodontists were shown in pictures on the screen. These operations were corrective and often relieved a patient of the effects of early neglect. Squirrel mouths were corrected, and crooked teeth straightened.

Roots should never be removed when they can be retained. Dentists are expert at retopping roots from which the crowns had decayed.

Following the lecture, Dr. Webster, professor of the Toronto Dental College, and editor of the Dominion Dental Journal was called on by Chairman Roberts, and spoke briefly. He congratulated the Dental Society and the speaker on the large audience. Education in this direction in Canada had not been progressing as far as it ought, but was making great strides of late. A course was now arranged for the normal schools, so that the teachers should teach fundamental rules of dentistry in the public schools.

T. W. Crothers, M. P., moved a vote of thanks in which he expressed the hope that the chairman would soon have something practical to offer. Trustees Wright and Doggett seconded the motion.

Dr. Dowd was entertained at the Grand Central by the Dental Society, outside guests including Dr. Fear, of Aylmer; Dr. Bothwell, of Stratford; Mayor Guest, Dr. Bentley, of London, and Dr. F. O. Lawrence.

There was present at the lecture Dr. McDonagh, of Toronto, with Dr. A. E. Webster, of the Dental College.

The lecture will be printed in pamphlet form with complete illustrations and will be distributed to the public under government supervision.

RESULTS

Under this head we shall print from time to time reports of the establishment of dental inspection in public schools, free dental clinics and other news from the field of dental education as the work goes on. We shall thank our readers if they will keep us fully advised of all developments in their locality.

(*Toledo Blade, Oct.* 15.)

Toledo is to have a free dental clinic which is to be established in connection with the Federation of Charities and the District Nurses' association.

The dentists of this city decided to inaugurate the move at their meeting and dinner at the Elks' club Friday night when nearly every member of the Toledo Dental Society met, listened to papers and addresses upon the subject, entered into a general discussion of the scheme and then voted to enlist in the cause of public health and philanthropy.

Addresses were made by Drs. D. A. Elwell, L. L. Zarbaugh, J. W. Hartshorn and Dr. Geo. B. Booth, who has charge of the free medical dispensary. John W. Dowd, former president of the Toledo school board, also gave a talk.

J. W. Dowd said that in New York city an examination of 14,000 school children revealed the fact that 12 per cent. of the number were suffering from malnutrition, 47 per cent. from diseased glands, 74 per cent. from defective teeth, 19 per cent. from defective eyesight, 27 per cent. from throat troubles and 29 per cent. from nasal troubles.

Dr. D. A. Elwell said that from 80 to 95 per cent. of the school children of the country have defective teeth that indirectly affect their eyes.

Dr. P. B. Brockway, in charge of the medical inspection department of public schools, gave an interesting and instructive talk on his work and on the large percentage of children in Toledo whom he found needed medical attention.

The Toledo dentists hope to have ultimately a dental surgeon on the city board of health; competent men to inspect the teeth of the school children at least twice a year and report to the board of health; free dental clinics for the care of the teeth of the worthy poor and to have oral hygiene taught in the public school text-books.

Pupils of the public schools of the District of Columbia will in future be examined as to the condition of their teeth as well as to their bodily health, if a recommendation of the school authorities is approved by Congress at the next session.

An appropriation of $1,000 has been asked for the pay of two dental examiners whose business it will be to examine and report the condition of the teeth of children in the schools. These examiners will receive the same salary, $500, as do each of the twelve medical examiners now employed in the schools, and will rank with them. They will be subject to such rules as the board of education and the Commissioners of the District see fit to draft. Before receiving appointment they will have to take a competitive examination, and must have had five years' practice of their profession in this city.

The request for the dental examiners is in keeping with other moves which the officials have made from time to time to better the health of children in the schools. Many requests have been made both by private individuals and associations that children be subjected to a dental examination.

The free dental clinic of the city of Philadelphia opened on Monday, October 3, with a volunteer staff of 140 local dentists.

Leominster, Me., reports that free inspection and subsequent treatment has reduced the number of defective mouths five per cent. during the past year.

Peoria, Ill., dentists have offered their services to the school board free of charge, the entire membership in the local society volunteering for the work. The board is to furnish a building in which the free clinic is to be established.

Waterbury, Ct., reports a decided improvement in the interest shown by both children and parents in the care of the teeth since the establishment of dental examination in the schools, as well as much less loss of time on account of toothache.

Fifteen of the dentists of Paterson, N. J., have organized themselves into a clinic association, for the purpose of carrying out plans for supplying dental treatment for the poor free of charge. An invitation has been extended to the other dentists in the city, and the association is sure to grow rapidly.

Examination of the teeth of children in the Findlay, Ohio, schools, having revealed the startling fact that more than eighty per cent. of the children were suffering from defective teeth, the attention of the school board has finally been drawn to the matter in an effective manner, and a movement has been inaugurated looking to the establishment of an infirmary for the free treatment of the poor.

Knoxville, Tenn., has established free dental clinics in connection with the public schools. Local dentists do the work free of charge.

Des Moines, Ia., is in line with a movement for inspection and free clinic.

ROBBERIES

Since our last report, which conveyed the good news that at least two of the gang of thieves that has been looting dental offices, had been given their desserts, or were in a fair way to enter upon a well-earned retirement from business at the hands of the authorities, only a few robberies have occurred, the principal ones being given

September 27—At noon, in broad day, the office of our good friend, Dr. W. O. Vallette, Goshen, Ind., was entered, and all the gold, silver and platinum taken, except a few pieces that the doctor had laid in the safe.

Eldora, Ia., Oct. 2—Numerous robberies of dental offices in this part of the state have been reported of late, the latest victim being Dr. F. W. Horton, of this city. That the work has been done by experts there seems no room for doubt, as only gold and other precious metals have been taken. Robberies reported run between $40 and $100 each. No clues ever are found, not a scratch or a mark of any kind appearing on doors or furniture. Safes have been opened by operating the combinations, never by blowing, and none of the offices are rummaged nor in any way disturbed.

Charleston, S. C., Oct. 5—Nearly $700 worth of teeth were stolen last night from the office of the dental supply house in this city. No other goods were taken. Just what disposition a thief can make of this kind of stolen goods does not appear on the surface; but that this thief knew what he wanted and secured it is evident, since he might have taken quantities of other goods had he so elected.

Westerly, R. I., Oct. 9—The dental offices of Dr. W. S. Smith and Dr. Sherwood were entered last night, and goods to a small amount were stolen from each. The work is apparently that of amateurs, as no discrimination was shown in selecting goods of value.

Stamford, Ct., Oct. 20—The dental office of Dr. W. R. Cook was entered last night, and a large amount of gold, some in original packages, some in the form of crowns and bridges, was taken. No clue was left by the thief, who made a clean job of it.

New York, Oct. 20—Early this morning burglars looted the offices of Dr. Leo Greenbaum, at 741 Fifth avenue. The door was opened by the use of a jimmie, and almost everything of value was taken, including instruments, gold and other precious metals, a loving cup that had been presented to the doctor by his classmates, and an ornamental clock. The value of the loot runs into the hundreds of dollars.

Providence, R. I., Oct. 23—The doors of the dental offices at 230 Westminster

LISTERINE

The best antiseptic for a dentist's prescription

As a daily wash for the preservation of the teeth, and for maintaining the mucous membrane of the mouth in a healthy condition, Listerine occupies a first place in dental and oral therapeutics. Listerine is truly prophylactic, in that it exercises an inhibitory action upon the acid-forming bacteria of the mouth, and thus maintains the alkaline condition so necessary for the welfare of the teeth.

LISTERINE TOOTH POWDER

An innovation, in that it possesses neither fermentative nor harshly abrasive ingredients, Listerine Tooth Powder very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouthwash of Listerine, suitably diluted.

¶*The undersigned will be pleased to send supplies of Listerine Tooth Powder samples for distribution to patients, upon receipt of the dentist's professional card, and this advertisement.*

Lambert Pharmacal Co., St. Louis, Mo., U. S. A.

WE, THE makers of Antiphlogistine, stand to lose should we make any claim which is not strictly in accordance with the facts. You, the dentists, are both judge and jury, and we can't get away from the verdict.

When we state, therefore, that Antiphlogistine may be safely used on the outside of the cheek in a case of alveolar inflammation, without fear of causing an abscess which will break on the outside, you can depend upon it that our statement is backed up by clinical experience.

This being the case, can any dentist afford not to give it a fair trial?

The Denver Chemical Mfg. Co.
New York

Brighten's Aluminum Polish

The Modern Dental Abrasive

Brightens Gold, Brightens Aluminum, Brightens Aerdentalloy, Brightens Vulcanite

The PERFECT PLATE FINISHING MATERIAL

Producing a deep, soft, lasting polish, unapproached by other media.

THOROUGH - RAPID - ECONOMICAL - DUSTLESS

Adheres to polishing wheel; does not waste by tangential action

Per Cake, 25 Cents. Sample for the Asking From Your Dealer or Direct

The Ransom & Randolph Co.
CLEVELAND TOLEDO GRAND RAPIDS

street were opened by means of keys last night, and the offices completely ransacked. Everything of value was taken, including instruments, the office being completely stripped, being left in the utmost confusion. In another office, instruments were taken, but a quantity of gold and platinum was overlooked.

Baltimore, Md., Sept. 19.—A robbery of bold execution and with every mark that it was the work of a professional, was pulled off in the dental supply house of Mr. Luther B. Benton, 302 West Saratoga street, yesterday afternoon, and the thief secured plunder valued at $3,656.75 by taking 15,000 platinum teeth facings, 2,000 Logan crowns and two students' cases.

After noon yesterday a well-dressed young white man went to the building, and in response to inquiries by a family living on the upper floor, said that he had an engagement with Mr. Benton. The people thought no more of the matter, and not until Mr. Benton opened his office at 7:40 o'clock this morning was it learned that the robbery had taken place.

Entrance to the store had been gained by the simple, but effective means of a jimmy, and once inside the thief went to Mr. Benton's desk, where the platinum was kept. The facings taken are valued at $2,000, while the crowns are valued at $1,440. The cases are worth but a little, but it is supposed that the thief took the cases to carry the other plunder in.

Los Angeles, Cal., Nov. 1.—The door of the office of Dr. A. P. Hayes' office was opened by the use of a key Sunday afternoon, and every scrap of gold stolen. No other goods were missed.

DEATHS

Murdered to Gain Reputation

Chicago, Oct. 25.—On the evening of August 5, Dr. Wm. F. Michaels, of Englewood, was shot down almost at his doorstep, by whom or from what motive it was at the time unknown. The murder was a deep mystery, and would probably have remained so but for the confession of one Leigh Rhodus, who, in his confession says that he shot the dentist who was unknown to him, because he was then making a reputation for himself and considered it essential to kill a man who resisted because it would frighten subsequent victims into submission.

The wife of the murderer tells a story that reads like fiction of the blood and thunder order. She says that after she had often accused her husband of being a bandit, he admitted to her that he was, and after that told her each night when he came home the details of his adventures. In the possession of the East St. Louis police are letters taken from the Rhodus home, one of which was written from Rock Island, Ill., August 23, in which Rhodus tells his wife that "he will get that tonight." He also wrote her other letters, in which he complains that "the kid" has "tipped him off to the police."

Mrs. Rhodus said that after her husband had told her of shooting a man in Chicago, she urged him to come with her to East St. Louis.

Dr. Perry E. Hall, Ashtabula. Ohio, aged 73, October 7. He had been a lifelong resident of Ashtabula and vicinity.

Dr. Russell O Calkins, Bryan, Ohio, October 25, died after a week's illness from peritonitis. Dr. Calkins was an alumnus of the University of Michigan, and since his graduation last June had practiced dentistry in the office of Dr. Williams in the Nicholas building, Toledo.

Dr. Frank Owen, Beaumont, Texas, was found, October 22, by his wife, lying dead in his room at the family home, the result of a self-inflicted bullet wound in the brain. He left a note, stating the reason to be despondency caused by lack of money and means of obtaining any. He was 50 years old.

Dr. Edgar Balis, Hudson, N. Y., October 4, for forty years a practicing dentist, after a brief illness.

Resolutions on the Death of Dr. J. P. Gray

At a meeting of the faculty of the department of dentistry of Vanderbilt University, Nashville, Tenn., to take action upon the death of J. P. Gray, M. D., D. D. S., for five years past secretary of the department, the following resolutions were adopted:

"That in the death of our associate the faculty has lost a valued member, the department a faithful secretary, and the students a friend who was ever ready to lend them all the assistance in his power.

"We remember with satisfaction his genial disposition, his affable manners and his constant devotion to all the demands of duty. We honor his memory because of his noble Christian character which was recognized by all who were associated with him.

"We extend to the bereaved family our deepest sympathy, knowing they have lost a kind and devoted husband and father."

Death of Dr. E. D. Brower

Dr. E. D. Brower, secretary of the Iowa State Board of Dental Examiners, was born in Leesville, Carroll County, Ohio, Jan. 15, 1858. He began the study of dentistry in 1878, with Dr. J. K. Morrison, at Ackley, Ia., and the following year entered Ann Arbor and was graduated from that school in 1881. He immediately began the practice of dentistry in Le Mars, Ia., continuing there until the time of his death. Dr. Brower was a man of no mean ability and always enjoyed a place in the company of those who were "doing things" in dentistry in Iowa. He was a genial, warm-hearted friend, a man who had the interests of the profession very much upon his heart, and who helped in the making of history in his State. He will be greatly missed in state and local societies, as well as from the Board of Dental Examiners. Dr. Brower suffered a stroke of paralysis, April 17th, from which he never recovered. Death came on Monday, Oct. 10th, and released him from bondage to a disease that would doubtless have kept him a cripple to the end, no matter how prolonged that end might have been. Our sympathy is extended to the wife and daughter, who remain to mourn the passing of a life, cut off in its very prime.

Dr. Charles Louis Dubar, East Orange, N. J., September 17, aged 59.

Dr. George E. Morrow, Elkton, Md., September 15, aged 53, of appendicitis, following an operation.

Dr. C. I. Newhouse, Minneapolis, Minn., September 10, aged 36.

Dr. F. N. Harvey, London, Ontario, September 26, of apoplexy. He had practiced in London for twenty years.

Dr. Jean C. Whinnery, son of Dr. J. C. Whinnery, of Omaha, died about four months ago in the Philippines, where he was serving as an army surgeon. The body was sent to Omaha and the funeral occurred September 18.

Dr. W. T. Withoft, Marion, Ohio, September 21, aged 41.

Dr. Wm. Strobel, Owosso, Mich., November 4.

The dead body of Dr. D. C. Hopkins was found on the floor of his office at Jonesboro, Ark., November 3. He had died of heart failure early in the morning. He had practiced at Jonesboro for twenty years.

For use in the treatment of Alveolar Pyorrhea and other inflammatory conditions of the mouth and gums there has been introduced to the profession a remedy under the name Zhongiva, which seems to possess merit well worthy of investigation, the manufacturers while conservative are positive in their statements and invite correspondence.

Irregular Teeth "Cause" of Crime

Irregularly aligned teeth, together with ill care, is conducive to crime, according to Dr. John F. Detwiler, a London dentist, who attended the annual exhibition of the Dental Manufacturers' Club of the United States, at Philadelphia, held during the last week in October.

"From statistics which I and other dentists have gathered at home," said he, "we have traced a remarkable percentage of crime among men and women under thirty years to bad teeth. The Dental League, of London, co-operates with the London constables in collecting these figures, and I myself have made many examinations of persons who have been arrested.

"Teeth which are not perfectly aligned in the mouth seem to make persons unreliable and finally give them a criminal instinct. This discovery is in its infancy, and I believe many strides will be made along this line in the course of the next few years."

Opening for More American Dentists in India

American Consul Stuart K. Lupton, of Karachi, India, reports that the principal medical officer of the British forces in India has advertised for four European or American dentists "with British qualifications," for the service of British troops in the Lucknow, Poona, Mhow, and Secunderabad Divisions.

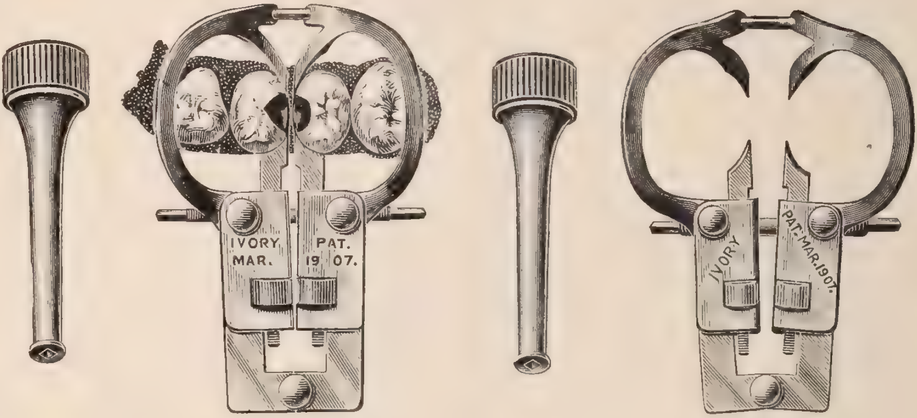
The One
BEST

Into every can of SOZODONT TOOTH POWDER there enters 64 years of experience and wholesome effort to provide the one safe and reliable dentrifrice to perpetuate the results of your own untiring efforts.

We offer SOZODONT Liquid-Powder-Paste.

Ivory's Adjustable Separator

Patented March 19th, 1907



THE jaws of each ½ of the separator working independently allows for the difference in the size of the teeth, gives a wide range for the adjustment of the jaws where the teeth are irregular, and a perfect control over the jaws so that they need never interfere or cover the margins of the cavity. The spreading force is many times slower than the ordinary screw force, no binding of the screw is possible, and its action is the most powerful screw force known.

Because the control of the jaws is completed, the movement of the spreading force so slow and evenly divided and the sense of touch perfect, the pain in separting the teeth is reduced to the minimum. It is universal for all operations extending beyond the first molars working on either side of the arch by changing the thumb nut.

PRICE FOR EACH $5.00

J. W. IVORY, 21-23 N. 13th St., Philadelphia, Pa.

EVANS ESTATE $1,250,000

Property of Famous American in Paris Dwindles

Philadelphia, Sept. 16.—The estate of the late Dr. Thomas W. Evans, the Philadelphian, who won fame and fortune as a dentist in Paris, has dwindled from $6,000,000 to $1,250,000, according to an announcement published here today.

Dr. Evans left the bulk of the estate for the founding of a museum in this city. The shrinkage in the value of the estate is due to the failure to realize upon much of the foreign real estate of the estate, and litigation has also been a drain on the fortune.

Notwithstanding the shrinkage in the value of the estate the trustees in charge of establishing the museum will not be compelled to alter the character of the building to be erected. The new institution will be allied with the University of Pennsylvania.

Nerves—The National Disease

"A nervous breakdown is, as a rule, the result of weeks, months, even years, of strain," says Dr. Jean Williams in Woman's Home Companion for November, "and at almost any time before disaster has overtaken one a complete change of habit, the shutting off of waste, the increasing of energy-making products, perfect rest until balance has been restored, would save the day. But here we must acknowledge the greatest difficulty. The victims are so often blind or indifferent to their own physical deterioration until they have arrived at that miserable state where *only* their own sad condition and numerous abnormal symptoms are of interest to them. We witness then the appalling self-engrossment characteristic of so many neurasthenics. Such patients often fight against relief, refuse to co-operate with a physician or others who try to aid and encourage them, and feel almost insulted if symptoms of good health or improvement are noted. In such cases effort must be directed toward the mental attitude, and at the same time, and this is very important, the physical basis of a healthy nervous system must be obtained."

An interesting picture of John D. Rockefeller at close range—and a very remarkable study of the character of the richest man alive—is contributed to the November *American Magazine* by H. M. Briggs, a close friend and the body guard of Mr. Rockefeller for many years. Speaking of his penuriousness, Mr. Briggs says:

"On one occasion, as evening drew near and we were in beautiful surroundings near North Dover, he said: 'I like this place. If Mr. Briggs has any money we will stay all night.' By the way, I have never seen Mr. Rockefeller spend a cent in his life. When farmer boys would bring baskets of fruit to the side of the automobile in the hope of garnering a little pocket money he would say, 'The only thing I can do for you is to show you pictures,' and out of his pocket he would take kodak views of himself and others on his various estates."

Amoria is the most ancient and honorable country upon the earth's surface, and is, without question, the most intensely populated. It is a green and fertile country and the principal occupation of its people is hearticultural husbandry. The form of government is Home Rule, and to become a citizen, although born in the country, it is required that at least one complete journey be made from end to end of the country's principal highway.

Amoria is bounded on three sides by Misanthropia, the State of Indifference and the Sea of Oblivion, emptying into which the Quarrel River forever pours its flotsam and jetsam.

Far up in the corner of the map we find Mount Curiosity, its snow-capped peaks lost in a soft gray veil of mist that has prevented the scientists from determining its greatest heights. The ascent of the mountain is usually made on the side where it comes nearest to the State of Indifference, where just below frost line there is a little plateau high, high in the heavens. This little plateau is known as the Plateau Platonic and is quite flat. In spite of its beauty and charm few travelers are satisfied to rest here long.—John Cecil Clay and Oliver Herford in *The Delineator* for September.

She Knew

One day, when Molly was about four years old, she was sent to feed the pigs. When she came back, she said, "That stuff isn't fit to give to pigs."

"How do you know?" asked her mother.

"'Cause I tasted it!"—*The Delineator* for December.

Of timely and immediate interest are the reminiscences of Mrs. Julia Ward Howe, a series beginning in *The Housekeeper* for November under the heading "The Friendships of Mrs. Julia Ward Howe." The first article chats breezily of the woman movement and the prominent women who have been connected with it. These articles were almost the last work in which Mrs. Howe was interested before her death. *The Housekeeper* is filled with captivating stories and the usual abundance of helpful information. *The Housekeeper Corporation,* Minneapolis, Minn. One dollar a year.

The turkey was not a very large one, and Mrs. Pedagog's boarders began to be a little anxious on the subject of its going around. Finally the last bit was distributed, and the Idiot, glancing at his portion, observed that he had drawn the neck and the pope's-nose.

"Ah, Mrs. Pedagog," said he, with a genial smile, "you are a wonder at making both ends meat!"—*November Lippincott's.*

Goes to Dental Society

Thousand Dollars Offered by William Hodge will be used for Benefit of Children

Rochester, N. Y., Nov.—The $1,000 which William Hodge, who has just finished playing an engagement in "The Man from Home," announced that he would give to the most deserving local charity was awarded to the Rochester Dental Society at a meeting Saturday night. Mayor Edgerton was given a check for the $1,000 by Mr. Hodge's manager.

That the money will be put to good use can be seen by the records of the work which has been done by the free dental dispensaries.

The records last year show that an average of eighty cents was necessary for the treatment of every child who came to have dental work performed. At this rate, even if the educational work which is being done in the schools and the mass meeting at Convention hall, raises the cost per child, the money will benefit at least 1,000 children directly, and as many more through knowledge gained in the care of the teeth.

The first story ever written for children by the author of "The Lady of the Decoration" leads the list of good things in the Christmas *St. Nicholas.* It is called "The Russian General's Son," and it is a story of two American lads and a little Russian prisoner of war; and it is illustrated in color by Genjiro Kataoka, who made the pictures for "Little Sister Snow."

The Century has selected the life of Martin Luther as one of its strongest features in 1911, because a knowledge of the work of Luther and of the Reformation and its effect on modern religious thought is necessary to an understanding of today's religious problems. This life is not written from a theological viewpoint, but is vivid, dramatic and readable, worthy to rank with *The Century's* great biographies—Sloane's life of Napoleon, Nicolay and Hay's Lincoln, Wheeler's Alexander the Great, Morley's Oliver Cromwell.

The Massachusetts State Board of Registration in Dentistry has announced the result of the October examination. Out of 81 who took the examination 25 passed.

The Texas state board of examiners will hold its next meeting at Austin on December 19.

The elections to the Ontario Dental Council were announced November 12. This council is akin to the medical council, except that in addition to its being an examining body, it also conducts the Royal College of Dentistry. The province is divided into districts, each district electing one member of the board.

The new board, elected for the two years ensuing, will be composed of Dr. John Robertson, Ottawa; Dr. G. E. Bonnycastle, Bowmanville; Dr. Wallace Seccombe, Toronto; Dr. Donald Clarke, Hamilton; Dr. H. Rabbatt, London; Dr. W. J. Bruce, Kincardine.

There yet remains the selection of a representative from one of the western districts and one from the faculty of the School of Dentistry. Practically all the members were elected by acclamation.

Dental examination in the Toronto schools was inaugurated November 14, as one result of the educational campaign recently begun in that city.